

# AIR-SEALED ELECTRICAL BOXES



ALLIED  
MOULDED  
PRODUCTS, Inc

### Residential Building Envelope – “Air Tightness”; IECC 2009

Residential Construction Changes – Department of Energy 30/30 Vision; The DOE set a goal to reduce building energy consumption by the 2012 IECC (International Energy Conservation Code) cycle. Current code changes within IECC 2009 have made major improvements on the way to the ultimate goal of 30% more energy efficient building construction.

### Many States Have Adopted IECC 2009 – More to come soon!

As of July 1, 2011 reports show that 21 states have adopted the IECC 2009 and many more are expecting to adopt it soon.

### Residential Building Envelope Tightness

One of the main components affecting residential construction changes is “Air Leakage” in the building envelope. The IECC 2009 mandates building envelopes to be:

- Sealed with caulking materials or . . .
- Closed with gasket systems
- Joints and seems sealed or taped or covered with a moisture vapor-permeable wrapping material

### Areas for Air Leakage/Infiltration in Residential Building Envelopes

One of the main areas being addressed is the electrical wiring box penetrations (switches and receptacles). Boxes must be properly insulated around and behind along with openings being sealed/caulked closed and must be sealed to drywall and any vapor barrier system.

### 2 Options to Demonstrate Compliance

- 1) When tested, air leakage is <7 ACH with a blower door at pressure of 33.5 psf (50 pa) (Section 402.4.2.1 IECC2009)
- 2) Field verification of construction methods per table (402.4.2 IECC 2009):

Component: Wiring

Criteria: Batt insulation is cut to fit around wires or sprayed/blown insulation extends behind wiring

Component: Electrical Box on Exterior Walls

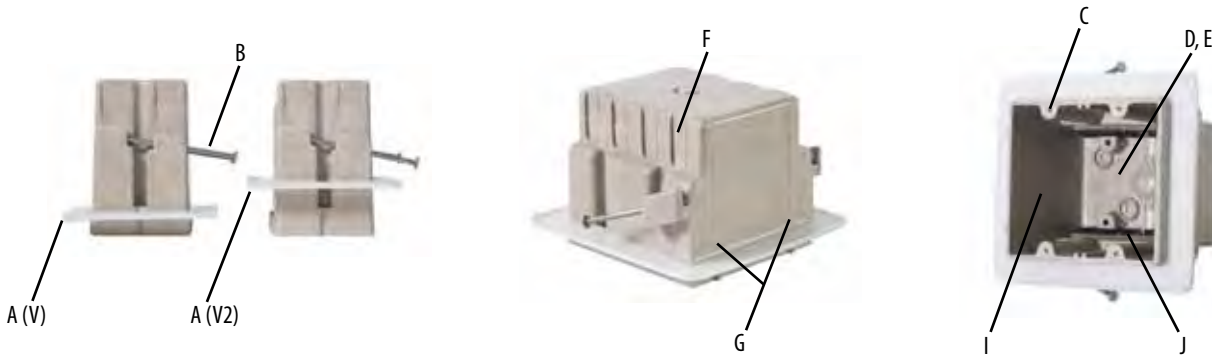
Criteria: Air barrier extends behind boxes or “AIR SEALED ELECTRICAL BOXES” are to be installed

### Allied Moulded’s Experience – “Air Sealed Electrical Box” Solution Provider:

Allied Moulded developed a patented “Air Sealed Electrical Box” for this application in the Minnesota market in 2000 to meet the MN Energy Code Chapter 7670 adopted in 1994. These products have been manufactured, sold and installed successfully in this market while providing electricians, insulation contractors and drywall contractors a solution to comply with this “Air Tight” building envelope construction method.

### Material and Labor Saving Features

With innovative products designed for the electrical contractor, Allied offers a complete line of wall and ceiling boxes for use in energy efficient homes to aid in sealing up the exterior walls per construction methods outlined in 402.4 of the 2009 International Energy Conservation Code.



A. Patented flexible polyurethane flange available for sealing box to air/vapor barrier. Flange products “V” are for single drywall and “V2” are for double drywall applications.

B. Bright common nails fit securely in specially designed supports and are angled for easy installation.

C. Tapered and machine tapped device holes allow device screw to be started by hand and speed installation time with high torque screwdrivers.

D. Cubic inch capacity clearly marked and easy for contractor and inspector to locate and identify.

E. Proudly UL® listed.

F. Knockouts on fiberglass boxes are complete, reducing drafts and easily removed with wire for no tools installation.

G. Leveling ribs position face of box parallel to wall surface.

I. 2-Hour Fire Rated clearly marked for easy inspector identification.

J. Patented non-metallic Speed “K” Klamps™ dependably secure wire in box.

# Switch or Receptacle BOXES



Catalog	Cubic Inch	Component	Outside Dimensions (min flange dim.)			Wall Substrate	UPC #	Standard	Standard
Number	Wire Capacity	Description	Depth	Width	Height	Offset	85339	Pkg. Qty.	Pkg. Wt.(lbs.)
1099-NV	22.5	Single gang, angled mid-nails, knock outs	3 9/16	2 1/4 (3 1/2)	3 3/4 (5)	1/2 - 5/8	26007	48	21
1099-NV2	22.5	Single gang, angled mid-nails, knock outs	3 9/16	2 1/4 (3 1/2)	3 3/4 (5)	1 - 1 1/4	26015	48	21
2302-NKV	37.0	Two gang, angled mid-nails, Speed Klamps™ factory installed	3 7/16	4 (5 1/4)	3 3/4 (5)	1/2 - 5/8	13077	48	33
RD-42V	42.0	Range/dryer receptacle box, fetter ring nails, clamp for #6/#8 AWG factory installed	3 3/4	4 (5 1/4)	3 3/4 (5)	1/2 - 5/8	12906	24	23
3303-NKV	56.5	Three gang, angled mid-nails, Speed Klamps™ factory installed	3 9/16	5 11/16 (7)	3 3/4 (5)	1/2 - 5/8	15209	18	18
4304-NKV	75.0	Four gang, angled mid-nails, Speed Klamps™ factory installed	3 9/16	7 1/2 (8 3/4)	3 3/4 (5)	1/2 - 5/8	17558	18	22
5305-NKV	94.0	Five gang, angled mid-nails, Speed Klamps™ factory installed	3 9/16	9 1/4 (10 1/2)	3 3/4 (5)	1/2 - 5/8	18011	6	8
5305-NBKV	94.0	Five gang, angled mid-nails, stabilizer bar, Speed Klamps™ factory installed	3 9/16	9 1/4 (10 1/2)	3 3/4 (5)	1/2 - 5/8	18012	6	10

Note: all dimensions are inches unless specified otherwise.

# Round Fan and Fixture SUPPORT BOXES



Catalog	Cubic Inch	Component	Outside Dimensions (flange dim.)		Fan	Fixture	Ceiling Substrate	UPC #	Standard	Standard
Number	Wire Capacity	Description	Depth	Diameter	Rating (lbs)	Rating (lbs)	Offset	85339	Pkg. Qty.	Pkg. Wt. (lbs.)
9350-FRBKBV	22.5	Strong "O" Bar hanger, Speed Klamps™ factory installed	2 3/8	4 (5 1/4)	35	50	1/2 - 5/8	10471	18	31
9350-FRBKBV2	22.5	Strong "O" Bar hanger, Speed Klamps™ factory installed	2 3/8	4 (5 1/4)	35	50	1 - 1 1/4	10482	18	31
9351-NKFRV	22.5	Fetter ring nails, Speed Klamps™ factory installed	2 3/8	4 (5 1/4)	35	50	1/2 - 5/8	65810	48	28

Note: all dimensions are inches unless specified otherwise.

## Round Fixture SUPPORT BOXES



9335-BHKV2



9335-HNKV2



9350-BHKV



9350-HNKV2



9351-NKV

Catalog	Cubic Inch	Component	Outside Dimensions (flange dim.)		Fixture	Ceiling Substrate	UPC #	Standard	Standard
Number	Wire Capacity	Description	Depth	Diameter	Rating (lbs)	Offset	85339	Pkg. Qty.	Pkg. Wt. (lbs.)
9335-BHKV2	20.5	16" to 24" adj. bar hanger, Speed Klamps™ factory installed	2 7/8	3 1/2 (4 3/4)	50	1 - 1 1/4	88125	18	25
9335-HNKV2	20.5	"HN" hanger, Speed Klamps™ factory installed	2 7/8	3 1/2 (4 3/4)	50	1 - 1 1/4	88126	50	30
9350-16KV	22.5	16" bar hanger, Speed Klamps™ factory installed	2 3/8	4 (5 1/4)	50	1/2 - 5/8	98301	24	24
9350-BHKV	22.5	16" to 24" adj. bar hanger, Speed Klamps™ factory installed	2 3/8	4 (5 1/4)	50	1/2 - 5/8	88124	18	26
9350-BHKV2	22.5	16" to 24" adj. bar hanger, Speed Klamps™ factory installed	2 3/8	4 (5 1/4)	50	1 - 1 1/4	10484	18	25
9350-HNKV2	22.5	"HN" hanger, Speed Klamps™ factory installed	2 3/8	4 (5 1/4)	50	1 - 1 1/4	10485	50	30
9351-NKV	22.5	Fetter ring nails, Speed Klamps™ factory installed	2 3/8	4 (5 1/4)	50	1/2 - 5/8	65811	48	26

Note: all dimensions are inches unless specified otherwise.

U.S. Patent #6,908,003 B2

fiberglass BOX™



# Air Sealed Electrical Box INSTALLATION

These instructions are recommended for the proper installation of Allied Moulded vapor seal boxes, which will provide a closed penetration, meeting requirements outlined in the 2009 International Energy Conservation Code.



## Electrical Box Mounting

- Locate desired mounting position
- Position vapor seal flat against front face of stud
- Secure box to stud w/ nails or screws



## Electrical Box Wiring

- Rough in electrical wiring per local code



## Sealing the Box

- Close all exterior openings and wire penetrations with an acceptable caulk or sealing material.



## Insulation

- Install insulation in wall or ceiling cavities



## Flange Preparation

(If wall will utilize an interior (Plastic) covering)

- Apply adhesive to front face of flange
  - Double stick tape or adhesive is acceptable
- Apply interior wall/ceiling vapor barrier (If Applicable)
- Apply wall/ceiling substrate

# THE CONTRACTORS CHOICE:

A complete line of nonmetallic electrical boxes for residential construction

fiberglass **BOX**



flex **BOX**



**SLIDER** BOX



**FAN** BOX



## Specialty Products

- Fire Alarm Boxes
- CFL Luminaire
- Floor Box Asm
- Low Voltage
- Shallow Wall Box
- Range/Dryer
- keyless/pullchain lampholders



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