



# GreenGuard® DC14 Drainage Mat

INSTALLATION GUIDE FOR RESIDENTIAL & COMMERCIAL APPLICATIONS



## 1. General Information

This Guide describes the use of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat in commercial and residential construction applications where it is installed in wall systems in combination with various types of exterior wall sheathings, water-resistive barriers and exterior coverings such as brick, stone, exterior insulation finish systems (EIFS), conventional stucco, vinyl, fiber cement, wood, etc.

This Guide is intended to provide installation guidelines for the use of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat. These guidelines are not intended to address all possible combinations of construction materials that may be used in a wall system. For this reason, the installation information provided is intended only as a guide and is for the convenience of contractors, specifiers and other interested parties.

Kingspan Insulation LLC offers a 10-year Limited Warranty for all *Kingspan GreenGuard*<sup>®</sup> Building Wrap products and a 15-year Limited System Warranty when *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat is installed in wall assemblies with *Kingspan GreenGuard*<sup>®</sup> Building Wrap, *Kingspan GreenGuard*<sup>®</sup> Custom Seam Tape and *Kingspan GreenGuard*<sup>®</sup> Butyl Flashing, in accordance with the instructions given in this document.

Flashings are designed for sealing around window and door rough openings and other exterior wall penetrations.

Kingspan Insulation LLC recommends the use of *Kingspan GreenGuard*<sup>®</sup> Butyl Flashing and *Kingspan GreenGuard*<sup>®</sup> SuperStretch<sup>™</sup> Butyl Flashing with *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat. *Kingspan GreenGuard*<sup>®</sup> Butyl Flashing and *Kingspan GreenGuard*<sup>®</sup> SuperStretch<sup>™</sup> Butyl Flashing have a butyl adhesive that has a wider recommended service temperature range and better adhering properties than ordinary flashings and enhances their ability to provide a seal against water intrusion when installed around window and door openings, roof / wall intersections, deck / porch attachments to walls, pipe penetrations and other areas that require a waterproof seal. *Kingspan GreenGuard*<sup>®</sup> Butyl Flashing is designed for sealing at straight openings, while *Kingspan GreenGuard*<sup>®</sup> SuperStretch<sup>™</sup> Flashing is flexible and designed for sealing around curved openings.

Alternatively, *Kingspan GreenGuard*<sup>®</sup> Standard Flashing may be used. *Kingspan GreenGuard*<sup>®</sup> Standard Flashing is a self-adhering membrane comprising a polyolefin film and a rubber-modified asphalt adhesive and is designed for sealing at straight openings.

*Kingspan GreenGuard*<sup>®</sup> Custom Seam Tape is designed to seal joints / seams in, and for repairs of, *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat.

## 2. Usage & Limitations

*Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat is intended to perform as a drainage mat in both commercial and residential construction applications when installed in accordance with this Guide. The following conditions apply to the use of the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat.

- *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat is used to manage water and wind-driven rain that enters the wall assembly through the cladding or siding.
- *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat should be covered with the exterior cladding or siding within 60 days of installation.

## 3. Building Code Requirements

*Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat meets the requirements of the 2006, 2009 and 2012 International Building, Residential and Energy Codes (IBC, IRC and IECC). These codes require that foam plastic insulation materials meet specific flame spread and smoke developed ratings. Applications involving the use of cementitious exterior coverings, such as exterior insulation finish systems (EIFS), conventional stucco and adhered thin masonry veneers (brick/stone), require the use of two layers of Grade D building paper or equivalent. This requirement can be met by using one layer of a water-resistive barrier (building wrap) and one layer of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat.

*Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat meets the requirements of ICC-ES "Acceptance Criteria for Foam Plastic Insulation" (AC12) and ICC-ES "Acceptance Criteria For Foam Plastic Sheathing Panels Used as Weather-resistive Barriers" (AC71).

## 4. Compliance

Intertek CCRR 1022;  
CA BEARHFTI Lic. No. TB 1334;  
MN Dept. of Energy – Chapter 7640;  
UL LLC® – See Classification Certificate A184.

## 5. Handling & Storage

When stored outdoors, all product should be protected from exposure to direct sunlight using the original packaging or an opaque, light-colored tarp. Material that has been unwrapped should be covered or rewrapped.

**WARNING:** This product is combustible. A protective barrier or thermal barrier is required as specified in the appropriate building code. Protect it from exposure to open flame or other ignition sources during shipping, storage and installation.

## 6. Health & Safety

*Kingspan GreenGuard*® DC14 Drainage Mat is made of synthetic materials that are generally recognized as not providing a food source for insects, fungus, mold, or mildew. It should always be properly installed and stored.

This product should not be used as an exposed interior surface in buildings where people can be expected to be present. An approved fire protection barrier, such as 1/2" gypsum wallboard or equivalent, should be applied between this product and the interior of such buildings. Fire and building codes should be followed.

All assemblies should be evaluated for effectiveness and location of vapor retarders to avoid condensation and subsequent damage to structures (ASHRAE Handbook of Fundamentals.)

Review this Installation Guide prior to installation.

Refer to the Safety Data Sheets for the products referred to in this Installation Guide for additional information.

## 7. Fasteners and Fastening Options

*Kingspan GreenGuard*® DC14 Drainage Mat is mechanically attached either through structural sheathing board or insulation board to underlying framing members or attached directly to framing members. The table below shows the fastening information for various framing and wall types.

	Metal	Wood	Masonry
Corrosion-resistant (e.g. Galvanized / Hot Dipped) Roofing Nail or Screw Type / Length (in)	1 <sup>5</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub> Tap Con
Metal / Plastic Washer Diameter, Min. (in)	1 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>
Fastener Spacing, Max (in)	24	24	24

### Minimum Fixing Requirement for Different Substrates

**NOTE:** When attaching wall ties for anchoring masonry exterior claddings, first install a patch of *Kingspan GreenGuard*® Flashing at the penetration site before installing the wall tie. The patch should be of a size to seal only the penetration points.

## 8. Installation on New Walls

### 8a Installation of Water-Resistive Barrier

*Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat is used as part of a moisture drainage system that incorporates the use of a thin sheet water-resistive barrier (WRB), e.g. *Kingspan GreenGuard*<sup>®</sup> Building Wrap, installed prior to the installation of the drainage mat. Please refer to the '*Kingspan GreenGuard*<sup>®</sup> Building Wrap Installation Guide for Residential and Light Commercial Applications' for installation instructions for these products and associated flashings.

**8b Installation of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat**  
Once the WRB has been installed, proceed with the installation of the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat as follows.

8b.1 Starting at a corner of the building, begin by installing the first (lower) course of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat so that the bottom of the sheet is aligned with the bottom of the sill plate.

8b.2 Continue unfolding the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat bundle and attach the sheet to the wall using one of the fastener types described in Section 7. Fasteners should penetrate the stud a minimum of  $\frac{3}{4}$ " and should be spaced approximately 2' apart along vertical stud locations. The fasteners should be installed so that the nail head or washer is flush with the surface of the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat (do not overdrive). The fasteners should be installed on raised areas only (see Figure 1).



Figure 1:  
Proper Location of Fasteners

8b.3 Trim the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat to fit close around all window and door frames. Installation of a drip cap is recommended at the top of all window and door heads (see Figure 2). The drip cap should be installed prior to installation of the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat. Trim closely around all wall penetrations, such as electrical boxes, mounting boxes, pipes, etc.

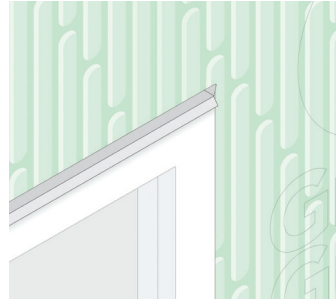


Figure 2:  
Installation of Drip Cap

8b.4 Install upper courses of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat so that the flat edge overlaps the flat edge on the lower course of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat by approximately 2" (see Figure 3).

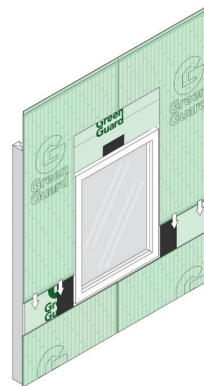


Figure 3:  
Installation of Upper Course of  
*Kingspan GreenGuard*<sup>®</sup> DC14  
Drainage Mat

8b.5 As an added level of protection, tape the seams of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat using tape, e.g. *Kingspan GreenGuard*<sup>®</sup> Custom Seam Tape (see Figure 4).

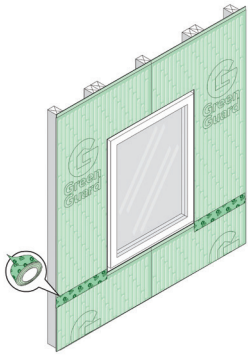


Figure 4:  
Finished Taped Seam

8b.6 In areas where the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat has been cut so that there is no flat edge to overlap, it will be necessary, in order to effectively seal the seam, to install a piece of flashing, e.g. *Kingspan GreenGuard*<sup>®</sup> Flashing, on the top edge of the lower course of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat as shown in Figures 5 and 6. Once the upper course of *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat has been installed, tape the seam using tape, e.g. *Kingspan GreenGuard*<sup>®</sup> Custom Seam Tape.



Figure 5:  
Flashed Seam Detail

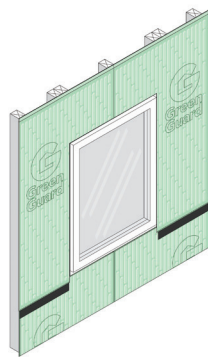


Figure 6:  
Finished Flashed Seam

8b.7 Figures 7 and 8 show examples of wall systems with the sequencing of the building wrap and *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat.

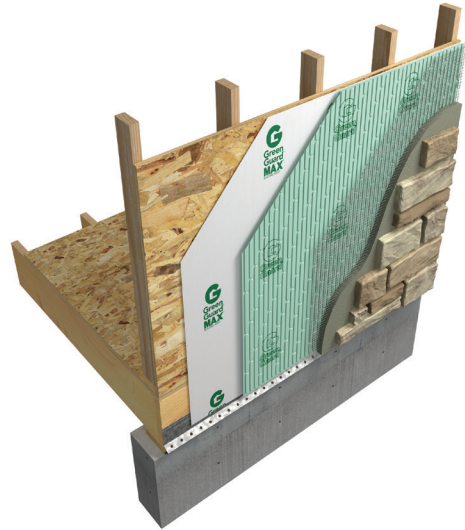


Figure 7: Finished Wall System—Adhered Stone Veneer

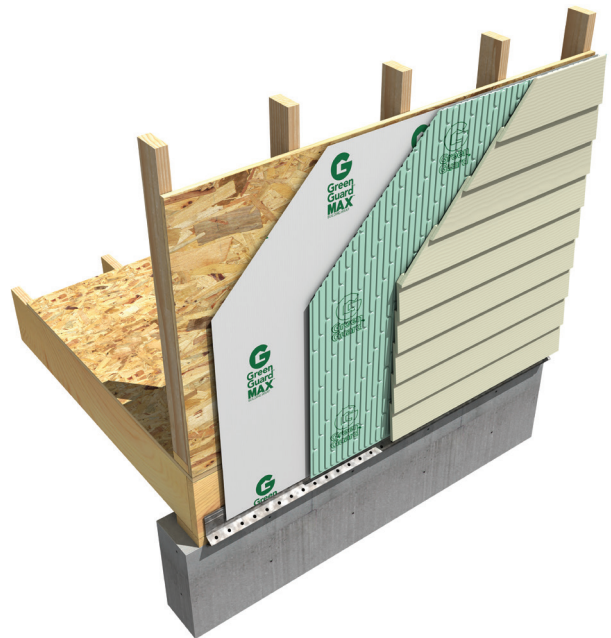


Figure 8: Finished Wall System—Siding

## 9. Installation when Re-siding

### Step 1

Remove existing siding. If underlying building paper or housewrap is damaged, install a new layer of *Kingspan GreenGuard® Building Wrap* as a water-resistant barrier (WRB).

Please refer to the '*Kingspan GreenGuard® Building Wrap Installation Guide for Residential and Light Commercial Applications*' for installation instructions for these products and associated flashings.

### Step 2

Starting at a corner of the building, install the first, lower course of *Kingspan GreenGuard® DC14 Drainage Mat* so that the bottom of the sheet is aligned with the bottom of the sill plate.

### Step 3

Continue unfolding the *Kingspan GreenGuard® DC14 Drainage Mat* bundle and attach the sheet to the wall using common roofing nails spaced approximately 2' apart along vertical framing member locations. If *Kingspan GreenGuard® DC14 Drainage Mat* is installed over wood structural sheathing, then the wood sheathing can be used as a nail base. If installing *Kingspan GreenGuard® DC14 Drainage Mat* over foam plastic insulating sheathing, then fasteners must penetrate through the foam sheathing to the underlying framing member. Fasteners must penetrate the wood sheathing or framing member a minimum of 1/2".

### Step 4

Trim the *Kingspan GreenGuard® DC14 Drainage Mat* to fit closely around all existing windows and doors. Also, trim closely around all wall penetrations, such as electrical boxes, mounting boxes, pipes, etc.

### Step 5

Install upper courses of *Kingspan GreenGuard® DC14 Drainage Mat* so that the upper courses overlap the flat edge of the lower course by 2".

### Step 6

Install the exterior siding or cladding in accordance with the manufacturer's installation guidelines.

## 10. Repairing Damaged Drainage Mat

### Small Tears and Holes

Use tape, e.g. *Kingspan GreenGuard® Custom Seam Tape*, or flashing, e.g. *Kingspan GreenGuard® Flashing*, to cover small tears or holes as shown in Figure 9.



Figure 9: Repair of Small Damaged Area

### Large Damaged Areas

To repair a *Kingspan GreenGuard® DC14 Drainage Mat* damaged area, cut out the damaged area and replace with a new piece of drainage mat that is cut to size. Tape all seams around the newly installed drainage mat replacement piece with tape, e.g. *Kingspan GreenGuard® Custom Seam Tape*; 2" minimum width.



Figure 10: Tape Edges of New Piece with *Kingspan GreenGuard® Custom Seam Tape*

## Appendix: Installation as a Water-Resistive Barrier (WRB) when Re-siding

*Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat is recognized for use as a water-resistive barrier in Intertek CRR-1022 when it is installed in accordance with the following guidelines.

### Installation over Existing Siding when Re-siding

When installing *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat over an existing exterior wall, and the existing siding will not be removed, the existing wall assembly is already providing weather protection. Since there are no code provisions that require that an additional WRB be installed over an existing wall, the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat can be installed using the instructions given in Steps 2 through 6 in section 9 of this Installation Guide.

### Installation on Walls with Existing Siding Removed when Re-siding

During the re-siding of walls where there is no housewrap or building paper covering the wood sheathing, *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat can be used in lieu of the code-required WRB when it is installed as described below:

#### Step 1

Begin by unfolding several feet of the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat bundle and aligning the product with the bottom edge of the wood sheathing at the bottom of the wall.

#### Step 2

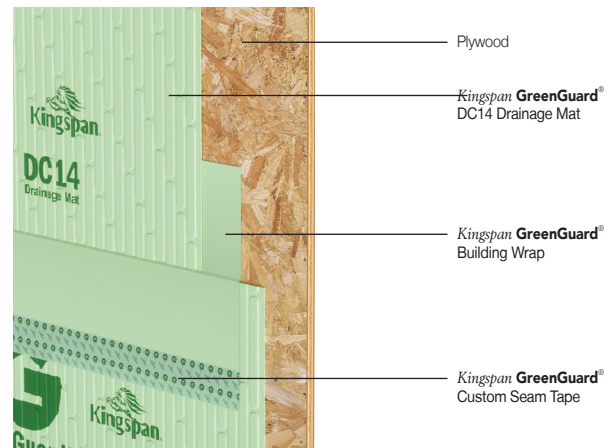
Attach the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat using common roofing nails spaced 2' on center around the perimeter of the wall and along vertical framing members. Nails should penetrate the framing member a minimum of 1/2". Care must be taken not to overdrive nails, since this may result in moisture leakage in areas where the damage extends completely through the product. Damaged areas should be repaired using tape, e.g. *Kingspan GreenGuard*<sup>®</sup> Custom Seam Tape.

#### Step 3

Trim the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat to fit around doors, windows and other wall penetrations so that gaps are minimized. Gaps larger than 1/8" should be sealed using tape, e.g. *Kingspan GreenGuard*<sup>®</sup> Custom Seam Tape, silicone sealant complying with ASTM C 920, Type S, Grade NS, Class 25 or an expanding spray foam sealant complying with AAMA 8 12. Many common sealants are compatible with *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat. Go to [www.kingspaninsulation.us](http://www.kingspaninsulation.us) and download Technical Bulletin 011 for a list of compatible solvents and adhesives.

#### Step 4

All vertical and horizontal seams of the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat must be sealed using tape, e.g. *Kingspan GreenGuard*<sup>®</sup> Custom Seam Tape, or flashing, e.g. *Kingspan GreenGuard*<sup>®</sup> Flashing (minimum 2" wide strips). As an alternative, a 'Z-furring' horizontal seam treatment may be constructed using 16" wide straps of *Kingspan GreenGuard*<sup>®</sup> Building Wrap sealed to the *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat as shown below.



#### Step 5

Install flashing, e.g. *Kingspan GreenGuard*<sup>®</sup> Flashing, at window openings, as described in the '*Kingspan GreenGuard*<sup>®</sup> Building Wrap Installation Guide for Residential & Light Commercial Applications', with *Kingspan GreenGuard*<sup>®</sup> DC14 Drainage Mat taking the place of *Kingspan GreenGuard*<sup>®</sup> Building Wrap.

For more information on specific building product recommendations and product data, contact your Kingspan Insulation LLC representative.

For the most current installation guidelines and compliance information go to [www.kingspaninsulation.us](http://www.kingspaninsulation.us).

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