



TECH BULLETIN

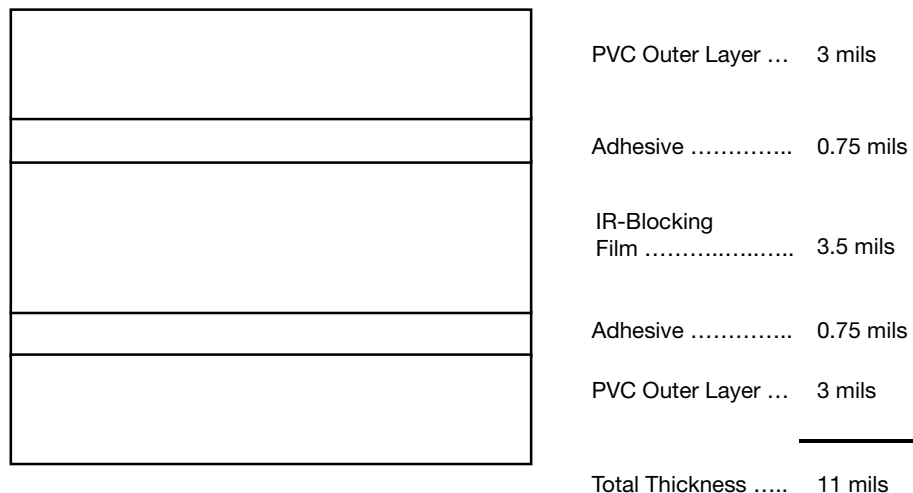
APPLICATION GUIDELINES for
Vikuiti™ Clear Card Filter

DESCRIPTION

The Vikuiti™ Clear Card Filter is a proprietary pre-laminate from 3M that effectively blocks infrared light, so you can now create transparent cards that work in standard ATMs exactly like traditional opaque cards:

- Laminated between two clear sheets of PVC, the clear, IR-blocking film allows nearly 100% transmission of visible light. The result is a clear card with all the functionality of opaque cards.
- Proprietary 3M technology makes cards compatible in ATMs, POS scanners, and other LED-related devices worldwide.
- Cards can accept traditional four-color printing in addition to a wide range of translucent inks, opening up a whole new world of design and marketing possibilities.

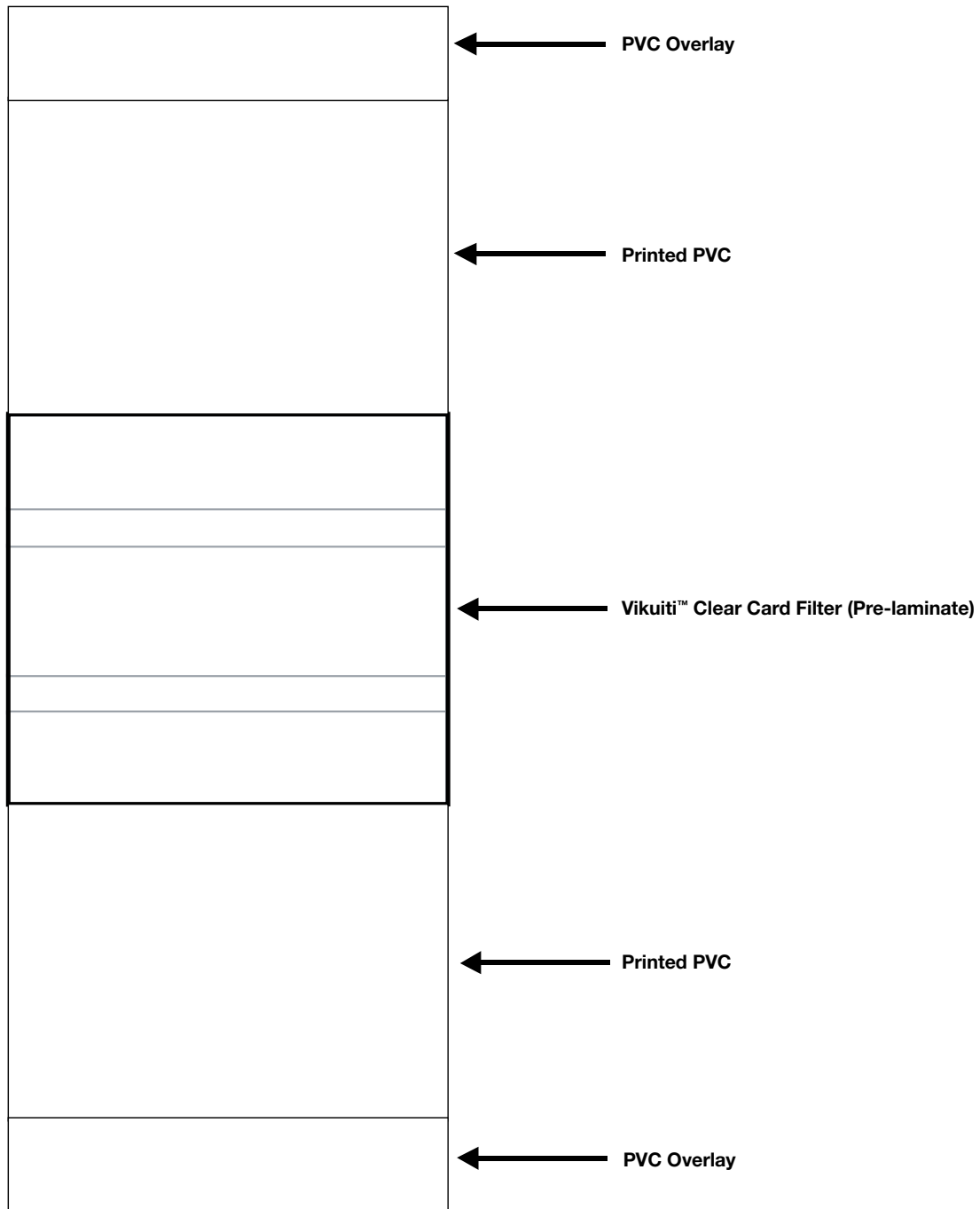
The figure below illustrates the pre-laminate’s basic construction. All dimensions are approximate and are not necessarily drawn to scale.



Vikuiti clear card filter is available in custom sheet sizes as wide as 30 inches.

TYPICAL APPLICATION

As shown below it is recommended that the Vikuiti clear card filter be placed in the center of the card construction to minimize warping caused by different material properties. Though not shown here, it is possible to create holes in the Vikuiti clear card filter to allow for the incorporation of chips such as those commonly used in contact-less card applications.



GENERAL CONVERTING, ASSEMBLY AND HANDLING RECOMMENDATIONS

The pre-laminate may appear hazy before being subjected to temperature and pressure. This cloudiness will be eliminated when pressed into card stock.

The pre-laminate may wrinkle when pressed into card stock, if this happens try raising both the temperature and pressure of the press in the hot cycle.

The Vikuiti™ Clear Card Filter can withstand typical laminating conditions of 275° to 350° F and 200 to 350 psi.

Die cutting is the recommended form of converting and will result in the cleanest edges, although shear cutting and laser cutting may be acceptable. Whatever method is used, you should ensure that the part has clean, crisp edges without any raggedness or other damage.

Be aware that handling any polymer film can generate electrostatic charges that can attract dust and debris.

Remove any loose debris from the pre-laminate by using compressed air.

Avoid fingerprints and debris by wearing gloves and handling the product at the edges.

As always, protect the film, especially the edges, from any undue shock or stress.

STORAGE

Material should be stored in its original packaging, laying in a horizontal orientation, away from direct sunlight. Heavy objects should not be placed on top of it to avoid damaging the product. Ambient temperature and humidity should be controlled to 10° – 30° C at 30 – 60% R.H.

IMPORTANT NOTICE TO PURCHASER

The following is made in lieu of all warranties, express or implied, including any implied warranties or conditions of merchantability or fitness for a particular purpose. 3M warrants that, at the time of shipment, product will meet 3M's published specification or that specification agreed in writing between 3M and purchaser. Should product not meet specifications at the time of shipment, 3M will replace or refund the purchase price of such quantity of the product found not to meet specifications. Purchaser shall determine the suitability of the 3M product to purchaser's application, including but not limited to purchaser's choice of ink formulations used for printing on product. 3M shall not be liable under any legal theory, including in contract or in tort, for any injury, loss, or damage, whether direct, indirect, incidental, special or consequential, arising out of the use of or the inability to use the product. **The warranties and remedies set forth herein are purchaser's sole and exclusive warranties and remedies.**

3M will make commercially reasonable efforts to give notice of the Buyer Patents identified on Exhibit B to any 3M customer buying IR Filters that has indicated to 3M that it will use those IR Filters for financial transaction card(s). 3M hereby notifies you of the following patents: US Patent No. 60/153,112; US Patent No. 60/160,519; US Patent No. 60/167,405; US Patent No. 60/171,689; US Patent No. US 2002/0130186; US Patent No. US 2002/0145049; US Patent No. US 2003/0141373; US Patent No. D436,620; US Patent No. D438,562; US Patent No. D438,563; US Patent No. D442,222; US Patent No. D442,627; US Patent No. D442,628; US Patent No. D442,629; US Patent No. D443,298; US Patent No. D447,515; US Patent No. D449,336; US Patent No. 6,581,839; PCT Patent No. WO 01/18745.



Advanced Optical Solutions
3M Center, Building 235-2S-62
St. Paul, MN 55144-1000
www.3M.com/imagineacard

Vikuiti and the Vikuiti "Eye" symbol are trademarks of 3M.

All other trademarks are property of their respective owners.

Please recycle. Printed in U.S.A.

© 3M 2007. All rights reserved.

75-0500-5281-2 Rev. 7/07