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**REPORT**

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To:

Cc.:

BC, BJ, HE, AS © Ranpak

Date: 11/11/02

From: Ger Teheux

Re.: **PadPak® Package Design for ceramic plate, (AS/1102/276)**

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Dear Mr.

A PadPak® Package Design was made for ceramic plate, which was supplied by your company. Following is a step by step pack instruction how the ceramic plate was packed with PadPak®. In addition we performed drop tests.

**PadPak® Package Design for ceramic plate**

1. Used your current standard FEFCO 0201 double wall corrugated.
2. Produced two 2 m pads. Folded the pads to double layers and placed them on top of the box.



- Produced two 2 m pads. Folded the pads to double layers. Placed the pads crossed on top of the previous pads.



- Placed the plate centered on top of the pads.



- Lowered the plate together with the pads to the bottom of the box.



- Folded the protruding pads over the plate. The box is now ready to be closed.



- The total amount of PadPak<sup>®</sup> that was used in this design is 8 m.

**Drop testing**

To compare the cushioning properties of the new PadPak® package design versus the current packaging materials we performed drop tests. The ceramic plate was given a flat bottom drop, because flat bottom drops occur in 70% of all cases. Besides that, flat bottom drops are the most devastating drops to packed products.

The plate was dropped from an 80 cm drop height. This drop height is typical for packed products with a weight between 0-10 kg. The G-values of the drops were measured. The lower the shock, the lower the G-value and the better the cushioning properties were. Results are shown on the table below. Graphs of all performed drops are attached to this document.

<b>Drop height 80 cm</b>	<b>PadPak® package design</b>	<b>Loose fill package</b>
<b>Ceramic plate</b>	29,70 G	54,63 G

As you can see, the new PadPak® package design provides much better cushioning properties to your product than the current packaging material.

**Summary / Comment**

To pack this ceramic plate we used 2-ply 70/70 PadPak® paper. This quality provides good fixation and excellent cushioning performance to your product.

Drop testing shows that the new PadPak® package design provides up to 45% better cushioning performance to your product than the current packaging material.

We used the same pad lengths, which makes packaging much faster and easier. It also makes pre-producing of pads possible.

Thank you for the opportunity to work on this project.

Sincerely,

Ger Teheux  
(Packaging Engineer)

Proprietary information

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