



November 20, 2002

Mr. Joe Smith
ABC Company
7990 Auburn Rd.
Concord Township, OH 44077



Subject: PadPak[®] Package Design for Mountain Bike Frame

Dear Mr. Smith:

We designed a PadPak[®] package for a mountain bike frame that we received from your company. Following are descriptions of the PadPak[®] design and condition of the current packaging.

PadPak[®] Package Design:

1. We made a new box with the same specifications as the current one.
2. Produced a 60 inch pad, and folded it in half to form a double-thick pad.



3. Placed the rear of the frame on the pad as shown.



4. Folded the pad ends over the frame tubes, and tucked them down in between the tubes to secure the pad in place.



5. Produced two (2) – 60 in. pads, and formed them into fairly tight coils. Placed them in the box bottom as shown.



6. Placed the bike frame in the box, and slid the head tube into the center of the coiled pad. The seat tube should rest on the other coiled pad. Pressed down on the frame to nest it into the coiled pads and create a firm fit between the right ends of the wrapped frame and box as shown.



7. Produced two (2) - 60 in. pads, and formed them into fairly tight coils. Stacked them in the end of the box over the head tube as shown.



8. Produced a 60 in. pad, formed it into a fairly tight coil, and placed it over the bottom bracket shell and frame as indicated. Closed and sealed the box flaps.



9. Total PadPak[®] used in this design was 30 linear feet.

Current Package Condition:

After opening the box, we noticed that the foam-in-bag pads were resting considerably below the box top opening as shown to the right. The bike frame had torn through the corrugated insert slots as shown below. Consequently, the bottom bracket shell was resting on the box bottom (see bottom right photo), and we observed small paint abrasion marks on the shell.



Summary & Comments:

The PadPak[®] material used in this design was 2 ply - 50/50. This material has excellent cushioning properties and should provide good protection for the mountain bike frame.

The current box uses 200 psi single wall corrugated material which is relatively low in strength for this large of a box. If your company experiences significant box crushing or tearing/punctures, you may want to consider using a stronger material such as 275 psi single wall or 200 psi double wall.

The packaged mountain bike frame should be shipped to you on November 21th via UPS Ground. This is a good test to determine how the package design performs in this shipping environment.

If you have any questions, please feel free to call me at (800) 726-7257, ext. 8094.

Sincerely,

A handwritten signature in black ink, appearing to read "Ed Martis". The signature is written in a cursive style with a horizontal line extending from the end.

Edward S. Martis, CPP
Packaging Engineer