

Rotted Beam Repair

The beam end shown in profile in Photo 1 was the outboard section of a cantilevered beam. This was originally cut off and a new piece sistered in to replace the rotted section. The contractor needed some SculpWood for a rot pocket left in the main section. We took his beam end and showed him how much easier and less expensive it would be to repair the beam ends rather than replace them. The nine photo set shows how this can be done using RotFix and SculpWood Putty and Paste.



1

The beam end is 18 inches long, 8 inches high and 5 inches thick. The rotted wood has been removed at this stage and borates have been applied. Note that upper right corner and right end have rotted away. The rot extended down into the diagonal cut. Note also the two splits in the wood. The upper one extended through the rotted area to the face on the other side and allowed the far face to be pushed inward. The task is to return the beam back to its original profile as well as rebuild the area where the rot was removed.

RotFix has been lavishly applied to all the rotted areas. Its low viscosity allows it to seep into all the cracks. When the RotFix was still slightly tacky SculpWood Putty was used to “dam up” the ends. We used a couple of our large plastic squeegees to establish the beam ends. These were duct taped into place and SculpWood Putty was packed against it. We used the putty to make large fillets to support the newly created partial face on the diagonal end shown. The putty on the inside towards the back was used to secure the floppy side caused by the crack mentioned above. We used a couple of stir sticks held in place with push pins to set the floppy face to the correct width. The putty fillet in front stabilizes the forward end of the floppy side.



2



3



4

This shows how the top edge and upper corners are re-established using plywood mold boards. The mold boards are covered with 2 inch wide packaging tape to act as a release for the applied SculpWood putty. The boards are affixed with hex head wood screws. Duct tape is used to hold the upper part of the end board to the side boards. Note that the top edge of the boards lies right at where the top edge of the rotted beam once was. This is achieved by using the remaining edge of the beam as seen in the rear portion of the photograph. About a half inch of SculpWood Putty has been applied to the shiny side of the packaging tape. (The sticky side is against the plywood.) The top part of the putty was applied slightly above the plywood edge and then sanded flush to establish the new edge. The plywood can be removed after sanding.

We left it on for the next step.

The cut 2 x 4's will be used along with SculpWood putty to fill the interior.



5

The plywood set into the cavity. These cheap boards replace the volumetrically more expensive SculpWood Putty. Here they are dry-fitted. Note that they lie below the top surface by about 1/4 inch. The boards will be removed and a layer of SculpWood putty will be applied to the bottom. The boards will be shoved into this and the putty pushed into the cavity between the board sides and the putty applied in Photo 4. The putty will fill the two cavities to about the top of the boards.



6



The plywood mold boards have now been removed and the SculpWood sanded to “clean it up” The edges on the sides and end of the beam exist because the beam was slightly concave. These will be “faired” in later using SculpWood Paste. Note the split in the forward part of the beam. This is the extension on the crack mentioned in Photo 1.



The slight recess in the top has been filled with SculpWood Paste using the newly formed edges as a guide. The side edges have been faired in.



Same repair state as Photo 8. Note the line of holes that have been drilled along the crack. These were sized such that the mixer tip of a cartridge of SilverTip GelMagic adhesive could be seated in the hole allowing GelMagic to be injected into the crack. This both sealed the crack and bonded the two sides together. At this point all the strength has been returned to the beam.

The beam is ready for painting. As an additional step, you can use SculpWood Paste as a surfacing layer to add some texture to the beam. The paste could be allowed to cure to the “green state” and then be carved or otherwise patterned. In our situation this did not matter.