



**From the Desk Of Bill Baxter**  
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Ref: TC Industrial Ceramic on NYB Fans for Sound and Insulation

Gentlemen,

TC Ceramic has many virtues which will help us sell more NYB fans. Most important is that it will substantially reduce casing radiated noise. Second it will allow us to provide a 30-40 mil thickness insulation barrier to protect TEFC motors instead of our standard 2" barrier that doesn't allow us to use as large a motor on "heat fan" arrangement #9 and #10 fans.

- 30-40 mils of TC Ceramic costs less than the heat shield we currently use.
- TC is a water based Latex coating which is not a risk to shop personnel when applied
- Coating a standard fan with standard quick opening access doors is less expensive than raised doors to accommodate an insulation blanket
- Unlike our current encased cladding there are no hot spots where internal supports for the cladding attach the inner casing to the cladding.
- There is no Engineering time expended drawing and designing special clad casings.
- Maintenance when required is the same as on a non insulated fan because you don't have to take off the outer casing to get at the fan or for that matter put it back on later
- If required TC can be top coated with a customer's favorite color
- Inlet Box Dampers and External Inlet Guide Vane Dampers can be insulated
- It's safer to ship a fan with TC on it than a fan we've applied insulation studs all over the scroll
- TC is a far more durable coating than our standard paint with essentially the same durability as a Linex bed liner
- TC is the answer for many of TLT's FD fan inlet boxes and housings where they have to control casing radiated noise in the first octave band
- The fancy inlet boxes with the two inlet dampers Bob Baty is selling are perfect applications because the air he is introducing between the two dampers is recovered heat so the box is hot. Applying TC to the box surface and bracing insulates everything with no hot spots where bracing is closer to the outer skin.
- I'm pretty sure fans with TC applied will have a different natural harmonic in the housing which may allow us to construct fans from lighter gauges without the associated vibration concerns
- Plug Fan plugs could get very thin or be completely redesigned to where we offered what we currently use for 250 degs F construction (no plug) for use at 450 degs F if coated with TC

The upper limit of TC is 500 degs F so it doesn't cover all our sins but most applications. TC works through dispersion and reflection. Capital City's "B" recording studio for 15 years has had it painted on their walls and there is a second studio as we speak which is being build by another company who is applying TC to the walls by the direction of the same sound engineer who did Capital City. Studio "B" was certified as the quietest studio in California by an independent engineering firm because it had no measurable "Ping" whatever that is. McDonald Douglas before they became Boeing tested and found that as little as 30 mils of an earlier version of TC knocked out 3-4 dBA in the first octave band which doesn't sound like much except when you realize that it usually requires a cinder block to take out that

much energy in the first octave band. Based on my experience in the field which is less than scientific, I believe we can expect a 15-25 dBA overall attenuation for our fans with only 30 mils of coating. If that proves out it would be huge.

Now you know why I'm so excited to have the 36" ACF class 3 I have sold be tested in the lab for casing radiated noise with and without TC. It would give us a definitive starting point so that NYB can decide once and for all whether there is any merit to TC. We have time to do the test because the fan does not have to be shipped until 10/10/07.

Regards,

Bill