

Bulletin BPI 13-10

Subject: Reading rotor wear patterns

Vehicle Involved: All

Condition: Rotor looks to have “hot spots” on surface

Repair Procedure: Through the years, the brake industry has gone thru many changes. Before ceramic brake pads become popular, all of our brake pads were abrasive style and wore the rotor eventually to discard. Ceramic pads on the other hand, are adhesive style and actually rely on material from the pad transferring to the rotor. This material transfer starts day one and is constantly leaving material on rotor face. On a rotor with proper run-out, the material is transferred evenly causing what looks like a bluing pattern completely across face. If the rotor has excessive run-out, the material is left in blotches (see figure 1). These spots of material cause a slip-stick action, especially under light braking. This uneven material transfer can also occur from caliper pistons not returning, rusted or sticking slides or worn hub bearings.

The material transfer can cause other issues such as rust jacking. Moisture gets under the transferred material and lifts the ceramic material off in flakes. We often condemn the rotor but in some cases, the flakes are all friction material. The ceramic pad typically uses some aggressive material to help maintain equal transfer. Copper was one such material but is being phased out due to environmental concerns.

Following manufactures run-out and torque specs and checking all related parts such as bearings and calipers should prevent your brake jobs from coming back with this issue.

