






## Diagnosing common brake faults – PADS


Appearance:	Visible lip on the pad surface	 <p><b>Uneven wear lip</b></p>
Cause:	A lipped brake disc causes this type of wear on the brake pad	
Effect:	Squeal, judder and premature pad wear	
Remedy:	Replace brake discs and pads	


Appearance:	Damaged back plate	 <p><b>Back plate damage</b></p>
Cause:	Excessive force during fitting	
Effect:	Braking efficiency reduced, irregular wear, noise and judder	
Remedy:	Replace the brake pad set	


Appearance:	Friction material worn out to the back plate	 <p><b>Worn out pads</b></p>
Cause:	Lack of regular maintenance and checking pad wear	
Effect:	Loud brake noise and damage to the disc. The vehicle may pull to one side during braking	
Remedy:	Check the discs for damage and replace if necessary. Replace pads	


Appearance:	Unevenly worn or tapered pads	 <p><b>Tapered pads</b></p>
Cause:	Sticking sliders on the caliper or excessive caliper clearance	
Effect:	Premature brake pad wear and noise while braking. Uneven braking pressure leading to a poor performance	
Remedy:	Replace pad set, maintain and service the caliper to ensure free movement of the pads	


Appearance:	Rust between the friction material and back plate	 <p><b>Rusty pads</b></p>
Cause:	If the pad cannot move freely in the caliper, it may stick and friction material can crack break away from the back plate. Corrosion will speed up this process	
Effect:	Noise, soft pedal feel and if the material separates – no braking performance!	
Remedy:	Replace brake pads and clean caliper and bracket to ensure the pad can move freely	


Appearance:	Thin cracks through the friction material	 <p><b>Cracked pads</b></p>
Cause:	Sticking caliper will cause the back plate to bend and flex, causing the material to crack	
Effect:	Noise while braking, irregular wear, the vehicle pulling to one side during braking and overheating on 1 corner	
Remedy:	Maintain and service the caliper and replace the brake pad set	


Appearance:	Metal pick-up (or ingrained metal) on the friction surface	 <p><b>Metal pick up</b></p>
Cause:	During normal braking small particles of the disc surface break off and are usually burnt off as dust. In very wet conditions, the particles are cooled quickly and stick to the brake pad material.	
Effect:	No real effect on the performance but in extreme cases it may cause damage to the disc which will start to squeal.	
Remedy:	In extreme cases only, replace discs and pads	


Appearance:	White edges of charred or burnt friction material	 <p style="text-align: center;"><b>Denaturing</b></p>
Cause:	Prolonged, very high pad temperatures due to intensive use or constant pad on disc contact	
Effect:	Reduced performance, abnormal wear, excessive deterioration. Excessive heat will cause a brittle material, chips and cracks	
Remedy:	Examine causes for overheating. Pads should perform effectively if the damage is not excessive. Replace pads if the damage is widespread	

Appearance:	Crumbling friction material and uneven wear	 <p style="text-align: center;"><b>Edge crumbling</b></p>
Cause:	Brake pad is sticking in the caliper and always in contact with the disc, causing extreme pad temperature	
Effect:	The friction material might glaze reducing brake performance	
Remedy:	Investigate why the caliper is sticking, clean and maintain it and replace the brake pads	

Appearance:	Uneven wear pattern on the pad	 <p style="text-align: center;"><b>Uneven wear – disc scoring</b></p>
Cause:	Incomplete contact between brake pad and disc if new pads	
Effect:	Fitted to an already worn disc. Disc scoring from excessive wear. Squeal, judder and a reduced braking performance	
Remedy:	Replace the pads and discs	

Appearance:	One of the pads in an axle set is severely worn	 <p><b>Uneven wear within a pad set</b></p>
Cause:	Sticking caliper, guide pins not allowing pads to move freely	
Effect:	Vehicle pulls to one side during braking, uneven and very quick pad wear	
Remedy:	Clean and maintain all the caliper sliding pins and pistons. Replace pads and check if discs need to be replaced	

Appearance:	The brake pad friction material is glazed	 <p><b>Glazing</b></p>
Cause:	Spikes in pad temperature over short time periods or aggressive braking during the bedding-in period	
Effect:	Temporary reductions in brake performance	
Remedy:	No action required for light glazing. Replace the pads if heavy glazing is evident and check the disc condition	

Appearance:	Friction material contaminated with oil, grease or brake fluid	 <p><b>Pad contamination</b></p>
Cause:	<i>Cause:</i> Spillage during maintenance, or a fluid leak from the caliper	
Effect:	Vehicle pulls to one side during braking and a reduction in braking performance	
Remedy:	Identify and repair cause of contamination and replace the brake pad set	

**Pagid recommended that when replacing brake pads to always check the thickness and the aspect of the brake discs too.**