



FERODO'S DURABILITY & SAFETY IS PROVEN ONCE AGAIN

COMPETITOR TEST

Whether you run a fleet of commercial vehicles or just repair them, one of your biggest concerns is keeping them on the road, running smoothly without accidents or unnecessary downtime. Brake quality and brake performance are key in achieving this.

STABLE FRICTION COMPRESSIBILITY IS THE MOST VALID MEASURE OF BRAKE PAD QUALITY

The compressibility of a brake pad's friction material should be within certain limits. It should be hard enough to ensure good pedal feel, minimal wear and sufficient power transfer from the pads to the disc. And at the same time it should be elastic enough to ensure sufficient grip on different disc surfaces. This makes it arguably the most important indicator of manufacturing process quality.

Ideally, brake friction compressibility is constant throughout the pad. So the less variation in compressibility values, the better the durability, safety and quality you get. The variation is determined by many factors, including:

- the quality of the raw material ingredients in the friction material mix
- the way the friction material has been mixed
- the quality and consistency of the pressing process
- blistering during the press-curing process
- cracks in the friction material
- the bonding process between friction material and back plate

A DIRECT CORRELATION TO MAINTENANCE REQUIREMENTS AND POTENTIAL ON-ROAD ACCIDENTS

A high variation in brake friction compressibility can cause excessive brake wear. It can also decrease brake performance and consistency. Each of these issues can drastically shorten service intervals, and performance/consistency issues might even pose a threat to the driver's safety.

FERODO PADS HAVE SOME OF THE LOWEST COMPRESSIBILITY VARIATIONS YOU WILL FIND

We compared the compressibility of Ferodo pads to that of competitor pads, measuring the compressibility in multiple areas of the friction material. The table shows the range between the minimum and maximum compressibility values. ▶▶



VARIABILITY TEST

Material		Ferodo FER 4550	Comp. 1	Comp. 2	Comp. 3	Comp. 4
Compressibility RT (5MPa) (µm)	Average	131	163	141	92	66
Range	Min / Max	111-157	131-206	106-183	78-113	54-82
	Variability Factor	0.35	0.46	0.54	0.38	0.42
Compressibility RT (8MPa) (µm)	[µm]	200	233	218	127	101
Range	Min / Max	171-231	196-285	169-276	111-154	85-118
	Variability Factor	0.30	0.38	0.49	0.33	0.32

The results prove that Ferodo offers some of the lowest – and therefore some of the best – variability factors on the market. We beat the competition at both 5MPa and 8MPa. This higher quality prevents the friction material from shearing off the back plate while driving. What's more, it ensures longer brake pad life with lower maintenance costs – which equals increased vehicle uptime.

FERODO IS CONCERNED ABOUT YOUR HEALTH AND OUR ENVIRONMENT

At Ferodo, we understand that heavy and toxic metals have a major impact on workshop and installer safety – not to mention they seriously pollute the environment. Many of the competitor pads currently in the market still contain dangerous metals in their friction materials. The table below shows the ecological rankings for non-exhaust emissions provided by the EU in its Protocol for Heavy Metals.

Grade	Friction Material is free from the following:
Grade 1	ECO-1 Free of lead (<1000ppm) / Cadmium ≤ 2ppm
Grade 2	ECO-2 As grade 1, & free of Antimony and its compounds
Grade 3	ECO-3 As grade 2, & free of Toxicological fibres
Grade 3E	ECO-3E As grade 2, & free of Toxicological critical fibres (aramid fibres permissible)
Grade 4	ECO-4 As grade 3, & free of Copper, copper alloys and copper compounds
Grade 4E	ECO-4E As grade 3, & free of Copper, copper alloys and copper compounds (<1000ppm)

Ferodo puts your safety first. We are one of the very first brake product manufacturers to exclude any dangerous metals such as antimony and lead, and have achieved a grading of ECO-3E. We use only safe raw materials that are of a higher quality and ensure improved compressibility and low wear.

COMPONENT TESTING

Main Constituents XRF		Ferodo FER 4550	Comp. 1	Comp. 2	Comp. 3	Comp. 4
Iron	Fe	x	x	x	x	x
Aluminium	Al	x	x		x	
Copper	Cu	x	x	x	x	x
Magnesium	Mg	x				
Chromium	Cr	x			x	x
Calcium	Ca	x				x
Tin	Sn	x			x	
Barium	Ba		x	x	x	x
Zinc	Zn			x	x	x
Silicon	Si			x		
Manganese	Mn				x	
Antimony	Sb		x	x		x
Lead	Pb					x
ECO-Rank		ECO-3E	ECO-1	ECO-1	ECO-2	Not ECO