

LINING SURFACE TAPERED



- MAIN REASONS**
- Brake shoes misaligned with the brake drum
 - Distorted brake shoe or brake drum turned on taper
- POSSIBLE EFFECTS**
- The linings may lock on to the drum when braking from high speeds
 - Vehicle pull and excessive brake noise may occur
- SOLUTION** Replace or grind/machine drum. Replace brake shoe anchor pins or parts that locate brake shoes

DEEP IRREGULAR CIRCUM-FERENTIAL GROOVES



- MAIN REASONS**
- Large particles loose in the brake
 - Very poor drum condition and maintenance
- POSSIBLE EFFECTS**
- Very high lining and drum wear
 - Squeal
- SOLUTION** Avoid contamination. Replace linings and grind or replace drum as appropriate.

GROOVED LINING SURFACE



- MAIN REASONS**
- Small loose particles in the brake
 - Insufficient drum cleaning at replacement
- POSSIBLE EFFECTS**
- Very high lining and drum wear
 - Squeal
- SOLUTION** Replace linings and avoid brake operation in dusty environment. Grind or replace drum as appropriate

CRACKS AROUND RIVET HOLES



- MAIN REASONS**
- Too heavy riveting force
 - Wrong shape of rivet heads
 - Brake shoe radius does not conform to lining radius
 - Brake shoe platform is not clean or even
- POSSIBLE EFFECTS**
- Lining and drum breakage
 - Brake over-heating
 - Noise
- SOLUTION** Replace linings, and avoid excessive pressure during riveting operations

STEPS IN THE LINING SURFACE



- MAIN REASONS**
- There may be a step in the brake drum surface
 - General drum wear
- POSSIBLE EFFECTS**
- Rapid lining wear
 - If the wear pattern differs across the axle, vehicle pull and excessive noise can result
- SOLUTION** Grind/Machine drum surface or renew (a drum grind may incur oversize lining fitment)

UNEVEN LINING SURFACE



- MAIN REASONS**
- Wrongly adjusted or worn axle bearings
- POSSIBLE EFFECTS**
- Very high lining and drum wear
 - Squeal
- SOLUTION** Replace linings, replace wheel bearing and replace or grind drum as appropriate

SCARRED LINING SURFACE



- MAIN REASONS**
- Poor drum condition, e.g. heat crazing
- POSSIBLE EFFECTS**
- Rapid lining wear
 - If linings not 100% bedded-in, low brake efficiency can result
- SOLUTION** Replace linings and avoid overheating brakes

GREASY LINING SURFACE



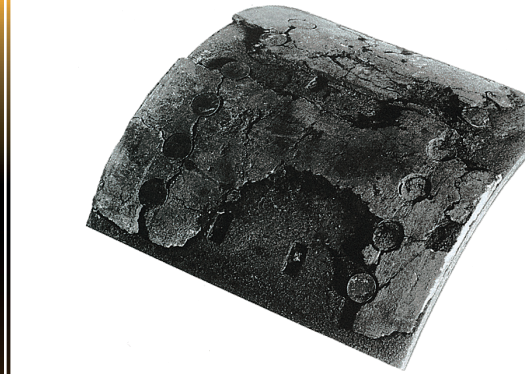
- MAIN REASONS**
- Broken or improperly mounted hub oil seals
 - Excessive lubrication of the bearings of the braking mechanism
- POSSIBLE EFFECTS**
- Vehicle pull may occur if the problem is only found at one side of the axle
 - Low deceleration
- SOLUTION** Remove grease from the linings, cure oil/grease leaks

CIRCUM-FERENTIAL GROOVES



- MAIN REASONS**
- Poor drum condition
 - Improper preparation with a wire brush, shoe grinder or similar
- POSSIBLE EFFECTS**
- Vehicle pull may occur if there is a different wear pattern on the opposite axle end
 - Insufficient deceleration and excessive noise
- SOLUTION** Replace linings and grind or replace drum as appropriate

LARGE FRACTURES IN LINING SURFACE



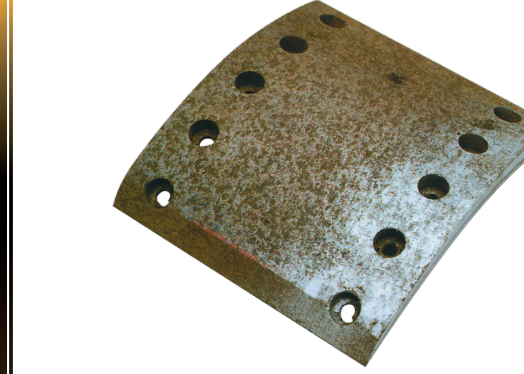
- MAIN REASONS**
- Faults in brake mechanism
 - Sticking brake shoes (weak return springs)
 - Excessive use of brakes at high speed
 - Overloaded vehicle
 - Too large air chambers
- POSSIBLE EFFECTS**
- High lining wear
 - Vehicle pull and excessive brake noise
 - Disintegration of lining
 - Low deceleration
- SOLUTION** Replace linings, avoid overworking brakes and ensure brake components are correct and are in good condition

BURNT LINING SURFACE



- MAIN REASONS**
- Faults in brake mechanism
 - Sticking brake shoes (weak return springs)
 - Excessive use of brakes from high speed
 - Wrong brake cylinders/air chambers or levers
 - Overloaded vehicle
 - Incorrect brake proportioning between tractor/trailer units
- POSSIBLE EFFECTS**
- High lining wear
 - Vehicle pull and excessive brake noise
 - Deceleration too low
- SOLUTION** Replace linings, avoid overworking brakes and ensure brake components are correct and are in good condition

DIRT ON THE LINING SURFACE



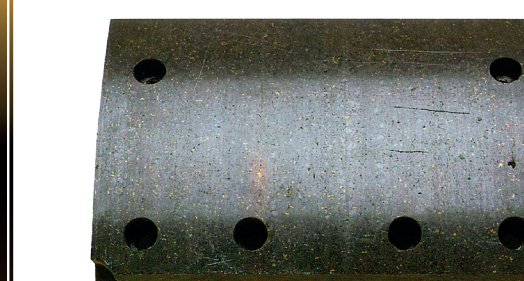
- MAIN REASONS**
- Dirt particles in the brake
 - Poor brake maintenance (insufficient cleaning)
- POSSIBLE EFFECTS**
- High lining and drum wear
 - Poor deceleration
 - Vehicle pull and excessive brake noise may occur
- SOLUTION** If heavy contamination, replace linings and ensure contamination-free relining operation

BUILD UP OF DIRT BETWEEN LINING AND BRAKE SHOE



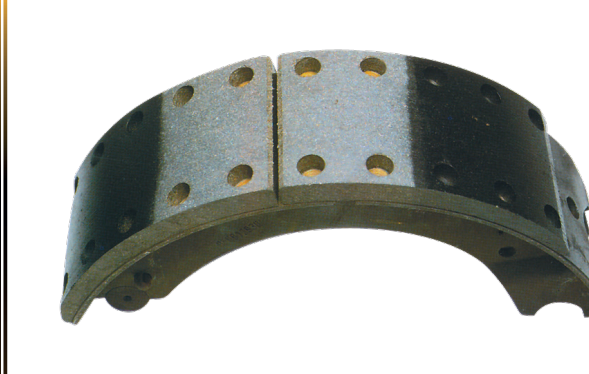
- MAIN REASONS**
- Shoe radius out of line
 - Shoe platform not blast cleaned and painted properly
 - Shoe platform not parallel
 - Lining riveted incorrectly
- POSSIBLE EFFECTS**
- Cracks in the lining material or crack in drum surface
 - Loose linings
 - Squeal
 - Improper cleaning causes rust scale to build up and lift the lining from the shoe
- SOLUTION** Replace linings and ensure shoe is clean and free from contamination before lining fitment

SURFACE CRAZING



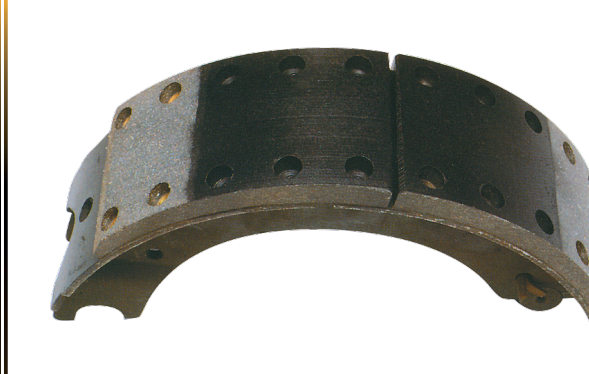
- MAIN REASONS**
- Caused by excessive brake temperature, i.e. when brake is cold on motorway then having to perform a sudden stop i.e. off a slip road. Rapid temperature input does not allow for heat soak from material into brake system
- POSSIBLE EFFECTS**
- This condition has no effect on the integrity or performance of the lining
 - Penetration of the crazing is usually no more than 1mm deep
 - Wear through with normal brake use and has no effect on the lining
- SOLUTION** Avoid high-speed heavy duty braking from cold

POOR BEDDING-IN 1



- MAIN REASONS**
- Lining radius is larger than actual drum diameter
 - Bedding-in period for the lining was too short
- POSSIBLE EFFECTS**
- Vehicle pull and excessive brake noise may occur
 - Low deceleration
- SOLUTION** Replace linings and ensure the correct lining radius to drum diameter is selected, or extend bedding-in period

POOR BEDDING-IN 2



- MAIN REASONS**
- Drum diameter is larger than lining radius
 - Bedding-in period for the lining was too short
 - Drum wear
- POSSIBLE EFFECTS**
- If the wear pattern differs across the axle, vehicle pull can result; also excessive brake noise
 - Low deceleration
- SOLUTION** Replace linings and ensure the correct lining radius to drum diameter is selected, or extend bedding-in period

POOR BEDDING-IN 3



- MAIN REASONS**
- Bedding-in period for the lining was too short
 - Drum wear
- POSSIBLE EFFECTS**
- Either low or very high deceleration, with high deceleration the linings may lock on to the drum
 - If the wear pattern differs across the axle, vehicle pull and excessive noise can result
- SOLUTION** Replace linings and ensure the correct lining radius to drum diameter is selected, or extend bedding-in period