
**Road vehicles — Brake lining friction
materials — Evaluation of corrosion effects
on painted backing plates and brake shoes**

*Véhicules routiers — Matériaux de friction pour garnitures de freins —
Évaluation des effets de la corrosion sur plateaux de freins peints et
segments de freins peints*





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Foreword

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Introduction

Corrosion issues and testing are varied and costly to assess, diagnose, and correct. This International Standard is used in conjunction with other standards which provide specific test methods, description of sample preparation and testing apparatus, evaluation criteria, and test reports. Emphasis is placed on the evaluation methods to ensure a definite set of international standards for reporting the different phenomena observed during and at the completion of testing.

This International Standard is intended for use in conjunction with other applicable standards or test procedures (ASTM, ISO, SAE, JASO, and other project or company-specific testing programs) to fully assess a friction material's adequacy for use in a certain application, market or vehicle platform. This International Standard does not include performance requirements related to durability, cosmetic appearance, or function under different vehicle conditions of temperature, mechanical stresses, environments, contamination, and operating conditions of the braking system as observed during actual vehicle operation.

Brake pads and brake shoes are key components in the vehicle braking system. Corrosion and its effects can generate warranty issues or costly repairs during the life-cycle of the vehicle. Since brakes are part of the underbody components, a detailed evaluation related to corrosion requires a comprehensive approach that provides a uniform set of laboratory test procedures and assessment criteria. Since corrosion-related phenomena are complex, this International Standard provides harmonization with other available international standards.

Previous experience in similar cases is a useful way to support the selection of a paint system for a specific application. The brake pad or shoe lining durability under corrosive environments depends heavily on factors such as working environment, system design, paint thickness and composition, surface preparation, application, drying and handling. Of primary interest are the chemical and physical characteristics of the binder and the dry-film thickness. Artificial-aging tests are useful to evaluate these characteristics. These tests include:

- resistance to moisture;
- resistance to fog;
- resistance to chemicals.

Exercise caution when analysing artificial-aging test results. Artificial exposure will not necessarily have the same effect as natural exposure. Not all factors occurring on the vehicle application are able to accelerate or replicate in the proper way. When feasible, plan and conduct natural-exposure or field-testing so that, in the long term, such abnormalities are resolved.

Since there are no models widely accepted by the industry to predict in-service life based on laboratory corrosion testing, estimation of actual durability for a given application or environment is beyond the scope of this International Standard.