



# 16th Edition of the QUALICOAT Specifications – Update Sheet – SPEC-US05

**Subject:** Test method for the Martindale test

**Proposal/Request:** Powders WG and Laboratories WG

**QUALICOAT resolutions:**

**Resolution No. 9/TC 22.11.18**

The TC agreed that the laboratories should be asked to perform the Martindale test on powder coatings for data collection during a transitional period, either with their own equipment or by outsourcing the test. The Specifications WG was requested to prepare an update sheet to include the testing procedure in the Specifications.

**Resolution No. 4/TC 15.05.19**

The TC asked the Powders WG to reconsider the draft Update Sheet No. 21 “Test method for the Martindale test”, taking into account the Laboratories WG’s questions and remarks.

**Valid from:**

Implementation for data collection with real application by the laboratories from 2020 renewals (Florida exposure 2021–2022/3/4).  
**No consequence on test results in case of failure until 2022 renewals.**

**Amendments to the Specifications:**

- New § 2.21 at the end of Chapter 2
- New numbering of tests in 4.1.3 (► SPEC-US06)
- New line in Appendix A10 (► SPEC-US06)

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Document Code:

SPEC-US05

QQM Section:

7.8.2

Date Approved:

22.11.2019

Approved by:

Executive Committee

Valid from:

01.01.2020

Version:

01

No. of Pages:

2

## 2.21. Scratch and mar resistance test (Martindale)<sup>1</sup>

### TEST METHOD - CEN/TS 16611

The test shall be performed on one panel.

Test panel dimensions: A5. Any deformation of the test panels that could affect the results shall be avoided.

The thickness of the powder coating shall be between 60 µm and 90 µm.

The test panel shall be clamped in the Martindale tester.

The testing instrument shall be moved across the surface in a Lissajous figure of 1.5 martindales, i.e. 24 movements (1 martindale = a Lissajous figure with 16 movements).

A new abrasion pad (3M Scotch Pad, CF-RL 7448, ultra-fine, grey) shall be used for each test and sample.

No additional weight plate is required.

Five gloss measurements shall be made on the panels according to ISO 2813 at a 60° angle of incidence before and after the Martindale test.

### REQUIREMENTS:

#### Gloss retention<sup>2</sup>

The gloss retention shall be at least

- 60% for organic coatings with a structured appearance in all classes
- 40% for class 1 and 1.5 smooth organic coatings
- 30% for class 2 and 3 smooth organic coatings

## 4.1.3 Tests for granting an approval

The following tests shall be made:

[...]

- Water spot test (2.20.)
- Scratch and mar resistance test (Martindale) (2.21.)
- Natural weathering (Florida) (2.13.)

With the exception of the Martindale test, the tests shall be performed on three test panels (for mechanical tests) and on three test samples (for corrosion tests) coated by a laboratory approved by QUALICOAT.

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<sup>1</sup> Implementation for data collection with real application by the laboratories from 2020 renewals (Florida exposure 2021–2022/3/4). No consequence on test results in case of failure until 2022 renewals.

<sup>2</sup> Gloss retention =  $\frac{\text{gloss value measured after testing}}{\text{initial gloss value}} \times 100$