

Comparison of European Coil Coating Test Methods (EN 13523) and ASTM Guides, Practices and Test Methods

This tool kit compares a list of European Coil Coating test methods found in EN 13523 against their counterpart ASTM Guides, Practices and Test Methods, described below as:

- Guide—a compendium of information or series of options that does not recommend a specific course of action.
- Practice—a definitive set of instructions for performing one or more specific operations that does not produce a test result.
- Test method—a definitive procedure that produces a test result

In many cases, a single EN test method will have more than one applicable ASTM practice or test method associated with it. There are two EN test methods for which no ASTM alternate exists at this time. (See the bottom of the attached list.)

NOTE: ASTM D3794 is a guide for testing coil coatings. It includes all the ASTM standards shown below, but also has an additional 50+ standards referenced.

This Tool Kit is part of a series of educational aids developed by the members of the National Coil Coating Association. NCCA is a trade association of coil coaters and suppliers of raw materials and equipment used in the coil coating process. The association concentrates its efforts on providing educational resources and assisting its members in providing superior products and services to their customers. NCCA Tool Kits are information tools and should not be used as substitutes for instructions from individual manufacturers. Always consult with individual manufacturers for specific instructions regarding their products and equipment.

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European Coil Coating Standards	ASTM Coil Coating Guides, Practices, and Test Methods
EN 13523-0 General introduction and list of test methods	ASTM D3794 Standard Guide for Testing Coil Coatings
EN 13523-1 FILM THICKNESS Method A Magnetic Induction	ASTM D7091-20 Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals
EN 13523-1 FILM THICKNESS Method B Eddy Current	ASTM D7091-20 Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals
EN 13523-1 FILM THICKNESS Method C Micrometer	ASTM D1005 Test Method for Measurement of Dry-Film Thickness of Organic Coatings Using Micrometers
EN 13523-1 FILM THICKNESS Method D Optical	ASTM D5797-20 Standard Test Method for Measurement of Dry Film Thickness of Thin-Film Coil-Coated Systems by Destructive Means Using a Boring Device
	ASTM D4138-07a Standard Practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means
EN 13523-2 SPECULAR GLOSS	ASTM D523-14 Standard Test Method for Specular Gloss
EN 13523-3 COLOUR DIFFERENCE	ASTM E308-18 Standard Practice for Computing the Colors of Objects by Using the CIE System
	ASTM D2244-21 Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
EN 13523-4 PENCIL HARDNESS	ASTM D3363-20 Standard Test Method for Film Hardness by Pencil Test
	ASTM D1474/D1474M-13 Standard Test Methods for Indentation Hardness of Organic Coatings
EN 13523-5 RESISTANCE TO RAPID (impact test)	ASTM D2794-93 Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
EN 13523-6 ADHESION AFTER INDENTATION (cupping test)	ASTM E643-15 Standard Test Method for Ball Punch Deformation of Metallic Sheet Material

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EN 13523-7 RESISTANCE TO CRACKING ON BENDING (T-bend test)	ASTM D4145-10 Standard Test Method for Coating Flexibility of Prepainted Sheet
EN 13523-8 RESISTANCE TO SALT SPRAY (fog)	ASTM B117-19 Standard Practice for Operating Salt Spray (Fog) Apparatus
	ASTM G85-19 Standard Practice for Modified Salt Spray (Fog) Testing
	ASTM D5894-21 Standard Practice for Cyclic Salt Fog/UV Exposure of Painted Metal, (Alternating Exposures in a Fog/Dry Cabinet and a UV/Condensation Cabinet)
	ASTM B368-21 Standard Test Method for Copper-Accelerated Acetic Acid-Salt Spray (Fog) Testing (CASS Test)
EN 13523-9 RESISTANCE TO WATER IMMERSION	ASTM D870-15 Standard Practice for Testing Water Resistance of Coatings Using Water Immersion
EN 13523-10 RESISTANCE TO FLUORESCENT UV LIGHT AND WATER CONDENSATION	ASTM D4587-11e1 Standard Practice for Fluorescent UV-Condensation Exposures of Paint and Related Coatings
	ASTM G151-19 Standard Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources
	ASTM G154-16 Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials
EN 13523-11 RESISTANCE TO SOLVENTS (RUBBING TEST)	ASTM D5402-19 Standard Practice for Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs
	ASTM D7835/D7835M-19 Standard Test Method for Determining the Solvent Resistance of an Organic Coating Using a Mechanical Rubbing Machine
EN 13523-12 RESISTANCE TO SCRATCHING	ASTM D7027-13 Standard Test Method for Evaluation of Scratch Resistance of Polymeric Coatings and Plastics Using an Instrumented Scratch Machine
	ASTM G171-03 Standard Test Method for Scratch Hardness of Materials Using a Diamond Stylus
EN 13523-13 RESISTANCE TO ACCELERATED AGEING BY THE USE OF HEAT	ASTM D6491-09 Standard Practice for Evaluation of Aging Resistance of Prestressed Prepainted Metal In a Dry Heat Test
	ASTM D2454-18 Standard Practice for Determining the Effect of Overbaking on Organic Coatings
EN 13523-14 CHALKING	ASTM D4214-07 Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
EN 13523-15 METAMERISM	ASTM D4086-18 Standard Practice for Visual Evaluation of Metamerism

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EN 13523-16 ABRASION RESISTANCE	ASTM D968-17 Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
	ASTM D4060-19 Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
EN13523-17 ADHESION OF STRIPPABLE FILMS	No ASTM equivalent.
EN 13523-18 RESISTANCE TO STAINING	ASTM D2248-01a Standard Practice for Detergent Resistance of Organic Finishes
	ASTM D1308-20 Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Coating Systems
EN13523-19 PANEL DESIGN AND METHOD FOR ATMOSPHERIC EXPOSURE TESTING	ASTM G7/G7M-21 Standard Practice for Natural Weathering of Materials
	ASTM D1044-18 Standard Practice for Conducting Exterior Exposure Tests of Paints and Coatings on Metal Substrates
EN13523-20 FOAM ADHESION	No ASTM equivalent.
EN 13523-21 EVALUATION OF OUTDOOR EXPOSED PANELS	ASTM D610-08 Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
	ASTM D714-02 Standard Test Method for Evaluating Degree of Blistering of Paints
	ASTM D660-93 Standard Test Method for Evaluating Degree of Checking of Exterior Paints
	ASTM D660-93 Standard Test Method for Evaluating Degree of Checking of Exterior Paints
	ASTM D1654-08e1 Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
EN 13523-22 COLOUR DIFFERENCE; VISUAL COMPARISON	ASTM D1729-16 Standard Practice for Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials
EN 13523-23 COLOUR STABILITY IN HUMID ATMOSPHERES CONTAINING SULPHUR DIOXIDE	ASTM G87-02 Standard Practice for Conducting Moist SO ₂ Tests
EN13523-24 RESISTANCE TO BLOCKING AND PRESSURE MARKING	ASTM D3003-01 Standard Test Method for Pressure Mottling and Blocking Resistance of Organic Coatings on Metal Substrates
EN13523-25 RESISTANCE TO HUMIDITY	ASTM D2247-15 Standard Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity
	ASTM D1735-14 Standard Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus

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	ASTM G60-01 Standard Practice for Conducting Cyclic Humidity Exposures
EN13523-26 RESISTANCE TO CONDENSATION OF WATER	ASTM D4585/D4585M-18 Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation
EN13523-27 RESISTANCE TO HUMID POULTICE (CATAPLASM TEST)	No ASTM equivalent
EN13523-29 RESISTANCE TO ENVIRONMENTAL SOILING (DIRT PICK-UP AND STRIPING)	No ASTM equivalent