

DIN EN ISO 2808:2019-12 (E)

Paints and varnishes - Determination of film thickness (ISO 2808:2019)

Contents		Page
European foreword		4
Foreword		5
Introduction		6
1 Scope		7
2 Normative references		7
3 Terms and definitions		7
4 Determination of wet-film thickness		11
4.1	General	11
4.2	Mechanical methods	11
4.2.1	Principle	11
4.2.2	Field of application	11
4.2.3	General	11
4.2.4	Method 1A — Comb gauge	11
4.2.5	Method 1B — Wheel gauge	12
4.2.6	Method 1C — Dial gauge	13
4.3	Gravimetric method	15
4.3.1	Principle	15
4.3.2	Field of application	15
4.3.3	General	15
4.3.4	Method 2 — By difference in mass	15
4.4	Photothermal method	16
4.4.1	Principle	16
4.4.2	Field of application	16
4.4.3	General	16
4.4.4	Method 3 — Determination using thermal properties	17
5 Determination of dry-film thickness		17
5.1	General	17
5.2	Mechanical methods	17
5.2.1	Principle	17
5.2.2	Field of application	18
5.2.3	General	18
5.2.4	Method 4A — By difference in thickness	18
5.2.5	Method 4B — Depth gauging	21
5.2.6	Method 4C — Surface profile scanning	23
5.3	Gravimetric method	24
5.3.1	Principle	24
5.3.2	Field of application	25
5.3.3	General	25
5.3.4	Method 5 — By difference in mass	25
5.4	Optical methods	25
5.4.1	Principle	25
5.4.2	Field of application	28
5.4.3	General	28
5.4.4	Method 6A — Cross-sectioning	29
5.4.5	Method 6B — Wedge cut	30
5.4.6	Method 6C — White-light interferometry	30

5.5	Magnetic methods.....	31
5.5.1	Principle.....	31
5.5.2	Field of application.....	31
5.5.3	General.....	31
5.5.4	Method 7A — Magnetic pull-off gauge.....	31
5.5.5	Method 7B.1 — Magnetic-flux gauge.....	32
5.5.6	Method 7B.2 — Magnetic field change, magnetic-induction principle.....	33
5.5.7	Method 7C — Eddy-current gauge.....	34
5.6	Radiological method.....	35
5.6.1	Principle.....	35
5.6.2	Field of application.....	35
5.6.3	General.....	35
5.6.4	Method 8 — Beta backscatter method.....	36
5.7	Photothermal method.....	36
5.7.1	Principle.....	36
5.7.2	Field of application.....	37
5.7.3	General.....	37
5.7.4	Method 9 — Determination using thermal properties.....	37
5.8	Acoustic method.....	38
5.8.1	Principle.....	38
5.8.2	Field of application.....	38
5.8.3	General.....	38
5.8.4	Method 10 — Ultrasonic reflection.....	38
5.9	Electromagnetic method.....	39
5.9.1	Method 11 — Terahertz method.....	39
6	Determination of thickness of uncured powder layers.....	41
6.1	General.....	41
6.2	Gravimetric method.....	41
6.2.1	Principle.....	41
6.2.2	Field of application.....	41
6.2.3	General.....	41
6.2.4	Method 12 — By difference in mass.....	41
6.3	Magnetic methods.....	42
6.3.1	Principle.....	42
6.3.2	Field of application.....	42
6.3.3	General.....	42
6.3.4	Method 13A — Magnetic-induction method.....	42
6.3.5	Method 13B — Eddy-current.....	43
6.4	Photothermal method.....	44
6.4.1	Principle.....	44
6.4.2	Field of application.....	45
6.4.3	General.....	45
6.4.4	Method 14 — Determination using thermal properties.....	45
7	Test report.....	45
	Annex A (informative) Overview of methods.....	47
	Annex B (informative) Measurement of film thickness on rough surfaces.....	50
	Annex C (informative) Factors affecting the precision of readings obtained when measuring on wooden substrates.....	52
	Bibliography.....	54