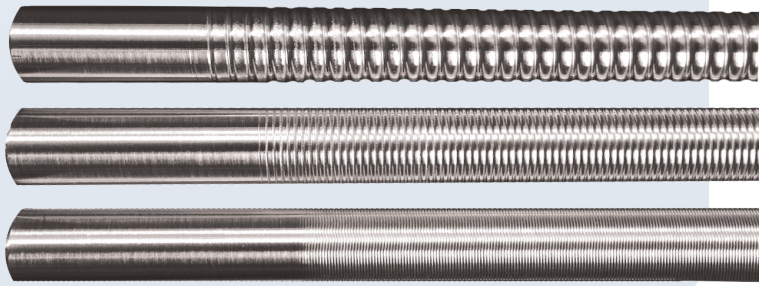
GARDCO®

Paul N. Gardner Company

APPLICATOR RODS
PAINT APPLICATION

Instructions for using formed rods and wire-wound (Mayer) rods.



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Applicator Rods

GARDCO applicator rods are used to apply controlled, uniform wet films of paints, coatings, and inks for laboratory drawdowns and quality control testing. Formed rods and wire-wound Mayer rods each deposit a known wet film thickness on prepared substrates.

The instructions below apply to these applicator rods:

Formed Rod

Grooved stainless steel rod that applies a controlled, thin wet film with no wires to break and easy cleanup.

Mayer Rod

Wire-wound rod that deposits a uniform wet film based on wire size, ideal for repeatable drawdowns at this nominal thickness.

Selecting a Rod

- Choose the rod based on the target wet film thickness specified for your application.
- Formed rods and wire-wound rods are available in a range of nominal wet film thicknesses; higher numbers deposit thicker films.
- For wire-wound rods, refer to the **Wire-Wound Conversion Chart** on page 3 to match wire size to approximate wet film thickness in mils and microns.
- Use the smallest rod that reliably gives complete, streak-free coverage for your coating and substrate.

Twin-Coat and Gapped Rods are used for applications requiring heavier wet film coatings and can provide advantages over conventional single-wire Mayer rods.

Twin-Coat Rods are made by over-winding a standard wire-wound rod with a second, smaller wire that follows the spiral pattern of the base wire. This modified groove geometry can produce wet film thicknesses up to 11 mils (0.011 in) and creates finer, more closely spaced coating striations that level more quickly for a smoother finish.

Benefits of Twin-Coat Rods:
- Produce heavier wet film coatings than standard wire-wound rods
- Provide more than twice the number of coating grooves for a given film thickness
- Generate finer, more closely spaced coating striations
- Promote faster leveling and a smoother, glass-like finish

Gapped Rods are designed for higher-viscosity coatings where conventional wire-wound rods may clog or create coating lines. They use a smaller wire wound with intentional spacing between turns, creating a wider, shallower cavity that allows heavier coatings to flow more freely.

Benefits of Gapped Rods:
- Ideal for high-viscosity coating materials
- Help reduce rod clogging and coating streaks
- Promote improved coating flow and wet-out
- Can produce wet film thicknesses up to 25 mils (0.025 in)
- Are generally less expensive than Twin-Coat Rods

Selecting a Rod (continued)

Gapped Rods considerations:

- Typically less durable than Twin-Coat Rods because of their open winding design
- Twin-Coat and Gapped Rods produce different coating patterns before flow-out, and each design is better suited to certain viscosities and target film builds

Typical Gapped Rods applications:

- High-build coatings
- Adhesives
- Protective coatings
- Specialty industrial coatings
- Research and development coating studies

Instructions for Use

1. Mix the coating thoroughly until it is uniform. Allow entrapped air bubbles to dissipate before use. Verify that the viscosity is suitable for a smooth, continuous drawdown with the selected rod.
2. Clean and dry the substrate, then place it on a flat, level surface. Secure it in place to prevent movement during the drawdown.
3. Place a consistent bead of coating across the top edge of the drawdown substrate, perpendicular to the intended draw direction. Use enough material to fully wet the rod across its working width without starving the ends.
4. Set the rod immediately in front of the bead, with the rod axis perpendicular to the draw direction and in full contact with the substrate.
5. Pull the rod in one smooth, continuous motion through the bead and across the substrate, maintaining even downward pressure and a steady speed. Avoid stopping, hesitating, or changing speed mid-pass, as this can cause thickness variation or defects.
6. After the drawdown, allow the coating to level naturally on the substrate. Dry or cure the film according to the coating manufacturer's recommendations before handling or testing.
7. Examine the dried or wet film for uniform coverage, streaks, bubbles, edge effects, or gaps. If required, measure the film thickness using suitable wet or dry film thickness measurement methods.

Applicator Rods

Wire-Wound Conversion Chart

This chart shows the wet film thickness obtained from a given wire size, and is only a guide. It is not possible to chart exact film thicknesses for all coatings since there are many variables; 100% solids, no evaporation or penetration into the substrate, rod diameter and pressure. Wire-wound rods are available up to wire size 75 and formed rods up to 90.

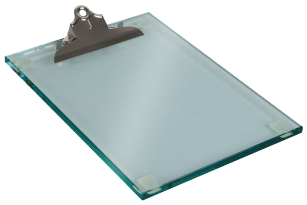
Wire Size	Decimal (inches)	Metric (mm)	Wet Film Thickness (mils)	Wet Film Thickness (microns)
0	.000	.00	.00	0.0
2-1/2	.0025	.06	.25	6.4
3	.003	.08	.3	7.7
4	.004	.10	.4	10.3
5	.005	.13	.5	12.8
6	.006	.15	.6	15.4
7	.007	.18	.7	17.9
8	.008	.20	.8	20.5
9	.009	.23	.9	23.1
10	.010	.25	1.0	25.6
11	.011	.28	1.1	28.2
12	.012	.30	1.2	30.8
13	.013	.33	1.3	33.3
14	.014	.36	1.4	35.9
15	.015	.38	1.5	38.5
16	.016	.41	1.6	41.0
17	.017	.43	1.7	43.6
18	.018	.46	1.8	46.2
19	.019	.48	1.9	48.7
20	.020	.51	2.0	51.3
22	.022	.56	2.2	56.4
24	.024	.61	2.4	61.5
26	.026	.66	2.6	66.7
28	.028	71	2.8	71.8
30	.030	.76	3.0	76.9
32	.032	.81	3.2	82.0
34	.034	.85	3.4	87.2
36	.036	.91	3.6	92.3
38	.038	.97	3.8	97.4
40	.040	1.02	4.0	102.5
42	.042	1.07	4.2	107.7
44	.044	1.12	4.4	112.8
46	.046	1.17	4.6	117.9
48	.048	1.22	4.8	123.1
50	.050	1.27	5.0	128.2
52	.052	1.32	5.2	133.3
54	.054	1.37	5.4	138.5
56	.056	1.42	5.6	143.6
58	.058	1.47	5.8	148.7
60	.060	1.52	6.0	153.8
62	.062	1.57	6.2	159.0
64	.064	1.63	6.4	164.1
65	.065	1.65	6.5	165.1
70	.070	1.78	7.0	179.5
72	.072	1.83	7.2	184.6
75	.075	1.91	7.5	190.5
80	.080	2.03	8.0	203.2
90	.090	2.29	9.0	230.8

Available Accessories

Bench Rack for 16” Rods

Holds multiple 16-inch coating rods in an organized, protected position between uses, helping prevent damage to the rod surface and keeping rods readily accessible.

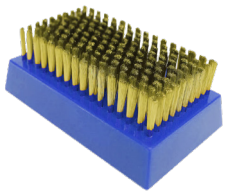
Buy at gardco.com



Drawdown Plate, Glass 14” x 10”

Flat, smooth glass plate that provides a stable, level surface for preparing drawdowns and test panels, improving film uniformity and repeatability.

Buy at gardco.com



Brass Anilox Duro-Brush

Stiff brass-bristle brush designed to help remove dried or stubborn coating residues from rod and roll surfaces without excessive abrasion when used properly.

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Available Accessories (continued)

CeramClean II Cleaner, 16 oz bottle (2/pk)

Specialty cleaner formulated to assist in removing cured or difficult-to-clean coating residues from compatible surfaces, supporting effective rod and equipment maintenance.

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