



PRODUCT FORMULATION GUIDE

TWO-COMPONENT WATERBASED POLYURETHANE COATING SYSTEM BASED ON QWF4744

Last updated: 11/06 SP

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Our two component waterbase urethane resin system is designed for use in coatings and finishes that demand high performance, long wear and ease of application. It is highly suitable for coating various flooring substrates such as wood, resilient floors, (vinyl & VCT tiles) and epoxy primed concrete. The coating system is comprised of an OH functional base resin, **QWF4744**, and isocyanate based curatives –e.g., **QZ-91**.

Guidelines for the formulation and use of our 2K system are shown below. They are provided as starting guidance to the formulator and Henkel does not guarantee the performance for end use applications. We recommend Henkel customers fully test starting formulas for manufacture suitability and the specific end use application and performance properties.

Formulating Part A: **QWF4744** should be formulated for viscosity and foam control:

STARTING FORMULAS

Typical Part A Starting Formulations:

For Wood Floors (LQW47-100D)		For Resilient Floors (VCT & Vinyl) (LQW47-100DM) LQW47-100HS			
By Wt, Lbs.	By Volume, Gals.	22%		30%	
By Wt, Lbs.	By Volume, Gals.	By Wt, Lbs.	By Volume, Gals.	By Wt, Lbs.	By Volume, Gals.
QWF4744		QWF4744		QWF4744	
Water		Water		Water	
³ Tego Foamex 805		Tego Foamex 805		¹ Wacker SE-21	
² Acrysol RM8-W } Water		¹ Wacker SE-21 } Water			
	100 lbs 100 gals		100 lbs 100 gals		100 lbs 100 gals

¹Wacker Chemical Group

²Rohm & Haas

³Goldschmidt Chemical Co.

MANUFACTURING INSTRUCTIONS:

1. Make premixes (as required) of defoamers (1) / (3) and or thickener (2)
2. Add QWF4744 resin to vessel
3. Add water to vessel
4. Start mixer, (Cowles blade preferred). Use moderate speed to avoid excessive foaming
5. Add Tego Foamex 805 (and Premix of SE21)
6. Continue mixing for 60 minutes. Reduce to low speed for release of process foam
7. If called for add sufficient Acrysol premix to give required viscosity

Typical Properties for LQW47-100D		Typical Properties for LQW47-100DM		or	Typical Properties for LQW47-100HS	
% Solids	30	% Solids	22		% Solids	30%
pH	8.0	pH	8.0		pH	8.0
Visc. (cps)	70-120	Visc (cps)	8-15		Visc (cps)	5-10
Wt. /Gal	8.7	Wt. Gal	8.7		Wt. /Gal	8.7
VOC	98 g/l	VOC	98 g/l		VOC	98 g/l

“FREEZE/THAW STABILITY- PASSES 5 CYCLES”

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Part B (QZ-91) Requirements for Gloss Coatings:

	<u>For Wood Floors (LQW47-100D)</u>	<u>For Resilient Floors (VCT & Vinyl) (LQW47-100DM)</u>	<u>(LQW47-100HS)</u>
		<u>22%</u>	<u>30%</u>
QZ-91 required for 5 gallon pack (35 lbs of formulated coating – Part A)	3.31 lbs	2.84 lbs	3.82 lbs
QZ-91 required for 1 gallon pack (6.6 lbs of formulated coating - Part A)	0.63 lbs	0.53 lbs	0.72 lbs

Leave sufficient room in the Part A pack for addition of Part B (QZ-91) and for manual stirring

Blending Part A and Part B

A/B blend will NOT gel with time. However, useable pot life after blending is 6-8 hours. Do NOT prepare more blend than is required for 8 hours.

- Part B should be blended into part A at time of use. Mix well by hand stirring for 10-15 seconds. Avoid excessive shaking and foam generation.
- **Mixed A/B generates CO₂ and should NOT be covered.**
- A/B mix will thicken slightly after blending and then fall to proper coating viscosity. Allow mix to stand 15-20 minutes before use.
- Straining of the blended product is recommended.

Both Part A & B should be packaged in pre-weighed units. Part B unit weight should be that prescribed for the accompanying Part A package (e.g., Quart, Gallon).

Preferred package size for Part B will minimize overhead airspace. Polyethylene 1/16” wall container with foamed polyethylene cap liner is strongly recommended for Part B Packaging.

Part B Units should be nitrogen blanketed and package instructions should inform users to blend ALL of the Part B package into Part A.

Users should NOT blend portions of the unit kit.

Application Recommendations: The A/B mix can be applied by sponge applicator, T-bar or brush. For spray application, familiarization with MSDS for Part B is emphasized.

Wood Flooring – A commercial waterbased acrylic emulsion is recommended as a seal coat. Bare wood, sealer coat and A/B topcoat(s) should be properly sanded before the final topcoat is applied.

Typical Cured Film Properties (Air Dry, 7 days)

Sward Hardness	55
Tensile Strength (psi)	4400
Elongation (%)	100
MEK (double rubs)	150-200
Weather Resistance	
Weatherometer	1200 hr; no loss of gloss
UVA-340 gloss loss;	<2%
Tack Free Time (min.)	30-35
Pot Life (hours)	6-8

QW4744 System: Performance Advantages

- Excellent abrasion resistance / gloss retention
- High sward hardness
- Fast Dry
- Superior solvent (MEK, Ethanol) and 100°C water Resistance
- Superior Stain Resistance

QWF4744 IS FREEZE/THAW STABLE BUT SHOULD BE PROTECTED FROM FREEZING

(QZ-91 must be packaged in full air tight containers to avoid moisture absorption).

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