105 Epoxy Resin® / 209 Extra Slow Hardener®

Technical Data Sheet

105 System
105/209

General Description

105/209 Epoxy is used for general coating and bonding applications in extremely warm and/or humid conditions or when extended working time is desired at room temperature. Provides approximately twice the working time of 206 Slow Hardener.

105/209 Epoxy forms a high-strength, moisture-resistant solid with excellent bonding and barrier coating properties. It will wet out and bond to wood fibre, fibreglass, reinforcing fabrics, foam and other composite materials, plus a variety of metals.

105/209 Epoxy can be thickened with WEST SYSTEM fillers to bridge gaps and fill voids. Once cured it can be sanded and shaped. With roller applications, it has excellent thin-film characteristics, allowing it to flow out and self-level without "fish-eyeing." Multiple coats of 105/209 Epoxy create a superior moisture barrier and a tough, stable base for paints and varnishes. It is formulated without volatile solvents, resulting in a very low VOC content. It has a relatively high flash point, no strong solvent odour and does not shrink after curing. It is not intended for clear coating natural finished wood.

Handling Characteristics

Mix ratio by volume (303 Mini Pump ratio)	3 parts resin : 1 part hardener
by weight	3.5 : 1
Mix viscosity (at 25°C) Brookfield	725 mPas
Resin Density	1.16 gcm^{-3}
Hardener Density	0.98 gcm^{-3}
Pot life (100g at 25°C)	50 to 70 minutes
Working time, thin film*	200 to 260 minutes
Cure to a solid, thin film*	20 to 24 hours
Cure to working strength	5 to 9 days
Minimum recommended temperature	18°C

**Epoxy cures faster at higher temperatures and in thicker applications.*

Physical Properties of Cured Epoxy

Specific gravity	1.09
Hardness 1 day (Shore D) BS EN ISO 868	70
Hardness 14 days (Shore D) BS EN ISO 868	82
Compression yield 1 day BS EN ISO 604	8.45 MPa
Compression yield 14 days BS EN ISO 604	69.17 MPa
Tensile strength BS EN ISO 527-2	50.59 MPa
Tensile elongation BS EN ISO 527-2	3.5%
Tensile modulus BS EN ISO 527-2	2.96 GPa
Flexural strength BS EN ISO 178	86.86 MPa
Flexural modulus BS EN ISO 178	2.95 GPa
Heat deflection temperature ASTM D-648	47°C
Onset of Tg by DSC	50°C
Ultimate Tg by DSC	57°C
Izod Impact ASTM D-256	58.74 J/m
Annular shear fatigue @ 100,000 cycles	4491 kg

Storage/Shelf Life

Store at room temperature (above 10°C). Keep containers closed to prevent contamination. With proper storage, resin and hardeners should remain usable for the duration of the specified shelf-life. After a long storage, verify the metering accuracy of the pumps. Mix a small test batch to assure proper curing.

Over time, 105 Resin will thicken slightly and will therefore require extra care when mixing. Repeated freeze/thaw cycles during storage may cause crystallisation of 105 Resin. Warm resin to 50°C and stir to dissolve crystals. Hardener may darken with age, but physical properties are not affected by colour. Be aware of a possible colour shift if very old and new hardener are used on the same project.

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