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Technical Data Sheet

406 Colloidal Silica

406 Colloidal Silica is a thickening additive used to control the viscosity of the epoxy and prevent epoxy runoff in vertical and overhead joints. 406 is a very strong filler that creates a smooth mixture, ideal for general bonding and filleting. It is also our most versatile filler. Often used in combination with other fillers, it can be used to improve strength, abrasion resistance, and consistency of fairing compounds, resulting in a tougher, smoother surface.

Use 406 Colloidal Silica to thicken the epoxy mixture to the desired consistency. The thickness of a mixture required for a particular job is controlled by the amount of filler added. There is no strict formula or measuring involved-use your eye to judge what consistency will work best. The chart below gives you a general guide to the differences between neat (unthickened) epoxy and the three consistencies referred to in WEST SYSTEM manuals.



Filler	Package size	Quantity of mixed epoxy required for				
		catsup consistency	mayonnaise consistency	peanut butter consistency		
406-2 406-7 406-B	1.7 oz 6.0 oz 10.0 lb	1.3 qt 1.1 gal 27.0 gal	.9 qt 3.0 qt 16.0 gal	.5 qt 1.7 qt 6.0 gal		





Typical Properties of Dry Filler

Bulk Density	$3.0 \text{ lb/ft}^3 (50 \text{ g/L})$
Average Particle Size	0.2 to 0.3 microns

Typical Properties in Cured Epoxy:

(105/206/406, mixed at mayonnaise consistency.)Shore D Hardness80.Compression Strength8,500 psiDensity65 lbs/ft³

Filler Selection Guide

	ADHESIVE FILLERS				FAIRING FILLERS	
USES Resin/Hardener mixture thickened with a Filler Use description—desired characteristics	Highest density Highest strength <				Lowest density → Easiest sanding	
	404 High- density	406 Colloidal Silica	403 Microfibers	405 Filleting Blend	407 Low- density	410 Microlight
Bonding Hardware —Increased fastener interface and hardware load capability—maximum strength	ኇጜኇ	ኇጜጜ	ኇዼኇ	ኇጜ		
General Bonding –Join parts with epoxy thickened to create a structural gap filler—strength/gap filling	ኇዼጜ	ኇዼጜ	ኇዼኇ	☆☆	☆	
Bonding with Fillets –Increase joint bonding area and create a structural brace between parts— smoothness/strength	ኇጜ	ኇዼኇ	ኇጜ	<mark>ተ</mark> ተ	ኇጜጜ	
Laminating–Bond layers of wood strips, veneers, planks, sheets and cores—gap filling/strength	ኇጜ	ኇጜ	ኇዼኇ	ኇጜ	ኇጜ	
Fairing –Fill low areas and voids with an easily shaped and sanded surface filler/fairing compound—sandability/gap filling					ኇዼኇ	ኇጜኇጜ

Filler suitability for various uses 22222 =excellent, 222222 =very good, 2222222 =good, 222222 =fair, (no stars)=not recommended.