SCOTT BADER ADHESIVES

CRESTOMER 1196PA

Low Density Core Bonding Structural Adhesive

Product Overview

Crestomer 1196PA is a low density, structural gap-filling core adhesive for use in sandwich construction where requirement is for a strong, tough, highly impact-resistant structure. It is based on Scott Bader's innovative urethane acrylate technology and exhibits exceptional impact strength and toughness. Crestomer 1196PA has been formulated to bond core materials such as rigid PVC foam and balsa to cured or semi-cured FRP skins. Using Crestomer 1196PA gives a significantly tougher and more durable structural bond than a polyester resin/glass structure or polyester bonding adhesive. In addition, Crestomer 1196PA provides significant weight savings, reduced styrene emissions and greatly improved cosmetics with the elimination of core print through.

Features and Benefits

Urethane acrylate base	Excellent adhesion and good elongation at break
Low density adhesive	Reduced weight of end product
Reduced core print through	Improved aesthetics and surface finish
Highly thixotropic	No sagging on vertical surfaces
Colour change system	Visual check for effective catalyst mix

Characteristics Using 2% Butanox M50 Catalyst

Characteristics	Typical Value
Working Time/Geltime[1]	50 Minutes
Fixture Time[2]	6:30 Hours
Flash Point	25°C
Colour Change (Over Cure)	Purple to Pink

1. Geltime measured with 100g mass of adhesive at 25°C.
2. Time taken at 23°C (ambient temperature) to achieve 1.4MPa strength in lap-shear tests according to ASTM C297/C297M.

Liquid Properties

Property	Typical Value
Viscosity[3]	250,000 – 320,000 cP
Specific Gravity	0.53 – 0.63
Volatile Content	40 – 45%
Mix Ratio[4] (by Weight/Volume)	50:1
Appearance	Purple Paste
Stability at 20°C[5]	3 Months

3. Measured using Brookfield Viscometer at 25°C.
4. Mix ratio based on volume and weight (1196PA/M50) for hand mixing. For machine mixing use 92:1 by volume.
5. Stability defined from date of dispatch when left un-opened in the original containers and stored out of direct sunlight.

Typical Material Properties

Property	Typical Value	Test Method
Hardness	69 Shore D	BS EN ISO 868
Maximum Tensile Strength	20 MPa	BS EN ISO 527-2
Tensile Modulus	1300 MPa	BS EN ISO 527-2
Elongation at Break	4%	BS EN ISO 527-2
Water Absorption	1.72%	BS EN ISO 62

Bonded Laminate Sandwich Structure Strengths – Typical Flat wise Tensile Strengths (MPa) ASTM C297/C297M
All values are substrate failure of the laminate/core material

Core material	Strength
Balsa	10.2
PVC foam, 80 Kg.m^{-3}	6.3

Approvals
Crestomer 1196PA has DNV Approval for use in the construction of craft built under their survey.

Core Preparation
Priming the core material is essential. It ensures complete wetting of the core material and in the case of balsa, it also effectively seals the grain against potential cracking in the event of minor gelcoat or laminate damage. To prime the core, a light coat of catalysed resin should be evenly sprayed or rolled onto the core surface. The primer resin does not need to be cured before the core can be pushed onto the Crestomer 1196PA. Crystic polyester resins such as 2.406PA, 414PA and 489PA can be used as the primer resin, although it is recommended that test panels of desired constructions are made to confirm performance.

Application
Crestomer 1196PA is supplied pre-accelerated. The required hardener is Butanox M50 (or other equivalent MEKP catalyst). The catalyst is added at 2% w/v. Crestomer 1196PA can be applied with a spatula or from a dispensing unit capable of achieving a volumetric ratio of 92:1 taking care to keep air entrapment to a minimum. Care needs to be taken on the pressure settings to ensure that the microspheres within the adhesive are not crushed, which adversely affects the viscosity of the material. Application should always be carried out at temperatures above 15°C. The recommended temperature range is between 18°C and 25°C.

After application, a saw cut toothed comb should be used to meter the adhesive into peaks. A comb with a 4-5mm edge will meter sufficient adhesive for most applications. Crestomer 1196PA is designed to allow full penetration of the core with a simple consolidation roller used to remove air from laminates. Penetration can be further ensured by the use of a vacuum bag; typical pressures of 0.04 – 0.07 MPa (6-10lb/square inch) are sufficient to ensure good contact.

For industrial/commercial use only. The user must determine the suitability of a selected adhesive for a given substrate and application. Contact you local Scott Bader representative for questions or assistance with the selection of adhesives for your use. This product is intended for use by skilled individuals at their own risk. Recommendations contained herein are based on information we believe to be reliable. The properties and strength values obtained under controlled conditions at the Scott Bader laboratory.

Coverage
Coverage is variable depending on the laminate contour uniformity and core material thickness. For 10mm thick square cut foam, an adhesive thickness of about 1.5mm should give adequate bond thickness and cut penetration. For 20mm thick core material, 2.5mm adhesive thickness may be necessary.

Adhesive Thickness	Coverage/m^2
1.5mm	1.5 Litres (0.9Kg)
2.5mm	2.5 Litres (1.5Kg)

Storage
Crestomer 1196PA should be stored in its original container and out of direct sunlight. It is recommended that the storage temperature should be between 15°C and 20°C. Ideally, containers should be opened only immediately prior to use. Products should never be frozen.

Packaging
Crestomer 1196PA is supplied in 15Kg and 100Kg containers.

Health and Safety
See separate Material Safety Data Sheet.

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