

## CRESTOMER 1196PA

### Low Density Core Bonding Structural Adhesive

#### Description

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.

#### Characteristics using 2% Butanox M50 Catalyst

Characteristics	Typical Value	Unit
Working Time/Geltime <sup>1</sup>	50	Minutes
Fixture Time <sup>2</sup>	6:30	Hours
Flash Point	25	°C
Colour Change (over cure)	Purple to Pink	-

#### Physical Data – Uncured

Property	Typical Value	Unit
Viscosity <sup>3</sup>	250,000 – 320,000	cP
Specific Gravity	0.53 – 0.63	-
Volatile Content	40 - 45	%
Mix Ratio <sup>4</sup>	50:1	w/v
Colour/Appearance	Purple Paste	-
Stability at 20°C <sup>5</sup>	3	Months

#### Physical Data – Cured

Property	Typical Value	Unit	Test Method
Hardness	69	Shore D	BS EN ISO 868:2003
Maximum Tensile Strength	20	MPa	BS EN ISO 527-2:1996
Tensile Modulus	1300	MPa	BS EN ISO 527-2:1996
Elongation at Break	4	%	BS EN ISO 527-2:1996
Water Absorption	1.72	%	BS EN ISO 62:1999

#### Bonded Laminate Sandwich Structure Strengths – Typical Flat wise Tensile Strengths (MPa) ASTM C297/C297M

Core material	Strength
Balsa	10.2
PVC foam, 80 kg.m <sup>-3</sup>	6.3

All values are substrate failure of the laminate/core material

#### Approvals

Crestomer 1196PA has DNV Approval and a Statement of Acceptance from Lloyd's Register of Shipping 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 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 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.

### 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 <sup>2</sup>
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 and 20°C. Ideally, containers should be opened only immediately prior to use. Products should never be frozen.

### Packaging

Crestomer 1196PA is supplied in 15 kg and 100 kg containers.

### Health and Safety

See separate Material Safety Data Sheet

### Notes

- 1 Gelttime 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.
- 3 Measured using Brookfield Viscometer at 25°C.
- 4 Mix ratio based on weight/volume (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 out of direct sunlight.

*All information on this data sheet is based on laboratory testing and is not intended for design purposes. Scott Bader makes no representations or warranties of any kind concerning this data. Due to variance of storage handling and application of these materials, Scott Bader cannot accept liability for results obtained.*

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