

Sourcing an Acrylic / Plexiglas / Perspex / PMMA adhesive

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From: grant (grant.linscott_at_gmail.com)

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I am currently trying to source an acrylic adhesive that fulfils the following requirements, and I would appreciate any product suggestions.

Thanks

Grant

Requirements:

- 1/ Must be structural, very high strength
- 2/ Must be gap filling
- 3/ Must be clear after setting (no colouration, no bubbles released from solvent evaporation)
- 4/ Must be unaffected by long term UV or Sunlight
- 5/ Must be permanently submersible in water (fresh and sea water)
- 6/ UV setting adhesives cannot be used due to nature of the join
- 7/ Must not give off extremely noxious vapours on setting
- 8/ Must be distributed in Europe
- 9/ Easily dispensed would be appreciated

The product is intended to bond cast, extruded and formed acrylic together in a high-pressure, load bearing application. The intention is to anneal the acrylic either before bonding or after. (Annealing and setting the adhesive at the same time – I would be interested to know some opinions on doing this together)

I have currently tested some products, specific polymer adhesives more than general adhesives. I have tested:

IPS Weld-On #16 – seemed to fulfil the requirements except for the bubbles released from the solvent. I have tried cooling the solvent-based adhesives to 5deg °C before use to limit the bubbles formed, but the result was still unsatisfactory.

IPS Weld-On #40/42 – has a yellow colour tinge.

A 'self-mixed' adhesive of Bostik Extrufix with acrylic cuttings added to form a paste – seemed to fulfil the requirements except for

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the bubbles released from the solvent.

Bostik Tensol #3 – From the specification it seemed this would fulfil the requirements perfectly, however in use it gives off the most noxious vapours.