

1. Introduction

ProBond 1C is a foaming polyurethane adhesive ideally suited for bonding low and medium density modelling boards such as the SMARTBoard ML80, ML150 and ML300 materials supplied by Mouldlife.

The open surface of foamed modelling boards is a difficult substrate to adhere to; the degree of foaming exhibited during the cure-cycle of ProBond 1C helps to ensure a good key to this surface and thus assists in attaining an exceptional bond.

Key benefits of ProBond 1C include:-

- Quick curing - rapid development of bond strength
- No mixing required
- Low viscosity allows for easy spreading once mixed
- Similar cured material to modelling boards - reduced bond-line witness marks

2. Applications

PROBOND 1C is suited for bonding modelling boards used in the following applications:-

- Arts and Crafts work
- Film, TV and Stage props and Special effects
- Mould Backing
- Scenery Design
- Sound Deadening

3. Typical Properties – Liquid Material

Property	Units	ProBond 1C
Viscosity @25°C	cps	~4000-6500
Specific Gravity @25°C	°Shore A	1.12-1.21
Appearance	-	Slightly Viscous brown hazy liquid

4. Typical Properties – Cured Adhesive

Property	Units	Minimum	Maximum
Cured Density*	Kg/m ³	600	850-900
Colour	-	Dark Yellow	

* depends on the level of humidity present when applying

Description

Polyurethane Adhesive particularly suited to bonding Polyurethane modelling boards

Density

Varies depending on relative humidity

Mix Ratio

1 part- no mixing

Typical Open Time

~20 minutes

Typical Fixture Time

~1-1.5 hours

Typical Usage

100g - 500g per m² (heavily dependent on substrate)

5. Approximate Reactivity @18-20°C

Property	Typical Value	Units
Open Time	~20	Minutes
Press Time	~45-50	Minutes
Cure Time	1-1.5 hours	Hours

6. Instructions for use – Preparation of substrate

- All surfaces should be free of contamination by dust, grease, oils or release agents.
- Substrates should be checked for contamination by mould release or cutting agents.

7. Instructions for use – Application at 18-20°C

1. Dampen the substrates with water; dry off any excess - do not leave any pooled water.
2. Apply a thin layer of ProBond 1C adhesive to the substrate*.
3. Under certain circumstances (for instance, during winter when ambient humidity is low) a very light mist of water applied to the adhesive may help. This step should be omitted if the adhesive is foaming excessively.
4. Bring the second substrate into contact with the adhesive and apply pressure; 10psi is desirable.
5. Leave for a minimum of 45-50 minutes under this pressure.

*The thickness of the applied layer will determine how thick the final bond-line will be - to minimise bond-line, apply the adhesives as thinly as possible.

8. Curing

1. If possible, leave overnight to allow the adhesive to build strength before working on the assembly.
2. However, tests may show that adhesive is sufficiently bonded after a few hours.

9. How much adhesive should I use?

This is highly dependent on the substrate; however, for an 80kg/m³ foam board such as Mouldlife's SMARTBoard ML80, we suggest 200-300g per m² as a starting point. Higher density boards would require less adhesive.

10. Working safely with Mouldlife materials

All polyurethane chemicals present certain hazards, and due care must be taken to ensure safe working practises are followed when using the materials. Failure to follow safe working practise when dealing with polyurethane materials can result in injury.

Some sensible guidelines for working safely with Mouldlife materials include, but are not limited to the following.

- i) You must carry out an appropriate risk assessment for the process you are carrying out. Useful guidance can be found at www.hse.gov.uk/risk/index.
- ii) You must read and understand the MSDS for the materials, ensuring that you follow the guidelines as indicated.

If in doubt, contact your Mouldlife representative who can put you in touch with experts who can assist.

11. Packaging, Storage and Shelf-life

ProBond 1C is available in a range of kit sizes:- 1kg, 5kg and 25fkg. Larger sizes can be provided upon request.

ProBond 1C should be stored between 18°C and 25°C. Under these conditions, shelf-life in the original, unopened containers is six months.

ProBond 1C is a moisture sensitive system and thus due care should be taken to avoid contact with moisture; store in a dry place, and reseal containers after use.