

Introduction

LTF318B surfacing film employs ACG's ZPREG® selective impregnation technology to achieve a high quality surface finish on composite mould tools manufactured by a vacuum bag processing. The film is used in combination with ACG's LTM®317-1B and LTM®318-1B long out life, vacuum-process tooling prepregs and offers new possibilities for the manufacture of affordable, rapid manufacture composite tooling.

These processing recommendations should be used in conjunction with the following ACG data sheets and process manuals:

- PDS1169 - ACG LTM317B and LTM317-1B ZPREG Processable, 150°C (302°F) Tooling Systems.
- PDS1187 - ACG LTF318B and LTM318-1B ZPREG Technology, 180°C (356°F) Tooling Systems.
- TDS1001 - Manufacturing Procedure for LTM Mould Tools.
- TDS1005 - Tip sheet for the Manufacture of High Quality LTM Tools.
- TDS1015 - Process Recommendations for Rapid Manufacture of Prototype Mould Tools.
- TDS1011 - Recommendations for Manufacturing Large Scale Marine Mould Tools From LTF/VTM260 Series Materials
- TDS1022 - LTM and ZPREG Technology Surfacing Film for Twintex Tooling Vacuum Bag Processing Recommendation.

Instructions for Use

1. Allow the roll to reach room temperature before opening the protective bag.
2. Always support the roll or stand it vertically on its end when it is not in use.
3. Remember to cut templates such that the tacky (glass scrim) side is applied to the pattern.
4. Cut 45° strips for use in all corners.
5. The surface ply should be laid up such that it will extend beyond the bulk plies by at least 10mm around the full perimeter of the tool. This is essential to ensure that air paths are maintained from the surface ply into the breather pack during the curing process.
6. A five minute debulk, using a perforated P3 release film, is recommended before starting to lay-up the bulk plies.
7. The surface ply should be backed up as described in TDS1001, TDS1015, TDS1101 or TDS1122.
8. A perforated P3 release film must be applied to the lay-up to ensure continuity of the air paths into the breather layer during the cure process.

9. Position the vacuum bag stack and apply full vacuum at room temperature, a minimum of 28 inches Hg (948mbar) vacuum pressure is required. A vacuum leak test should be performed to ensure there are no leaks in the bagging membrane.

Cure

1. Transfer the bagged assembly to a cold oven and commence heating, at a maximum rate of 2°C (3.6°F) per minute, to 65°C (149°F).
2. Maintain 65+/-3°C (149+/-5.4°F) for 16 hours. Contact ACG Technical Department for advice on alternative cure cycles.

Post-Cure

The mould may be post-cured at various temperatures, depending on the intended end-use temperature requirement.

The temperature should be increased from the initial cure temperature (65°C [149°F]) at a maximum rate of 20°C (36°F) per hour and held at the desired post-cure temperature for at least two hours before cooling at a rate of 3°C (5.4°F) per minute.

Note: The maximum operating temperature of the tool is governed by the maximum Tg of the bulk plies.

LTF318 will post-cure to a maximum Tg of 205°C (401°F).

Caution: High tack vacuum bag sealant tape has the potential to damage the mould tool flange areas during removal. Therefore, customers are advised to check the adhesion characteristics of their sealant tape prior to use and determine if removal of the tape is likely to lead to delamination. Where the potential exists for damage to occur, a less aggressive, lower tack sealant tape should be sourced or other steps taken to minimise the risk, such as using a mould sealer or applying a flash breaker tape.