



Joint CMH-17-EASA-FAA Workshop on Sandwich Disbonding

Date: 9th and 10th July – Technical University of Denmark (DTU), Copenhagen, Denmark

Dear Colleagues,

The CMH-17 Disbonding and Delamination Task Group in collaboration with the European Aviation Safety Agency (EASA) and the Federal Aviation Administration (FAA) is inviting you to attend a workshop in Copenhagen, Denmark this July to discuss recent advances in the field of design, testing and analysis of Face Sheet/Core Disbonding in Sandwich Composite Components. Prof. Christian Berggreen at the Technical University of Denmark (DTU) will host this event.

Face sheet/core disbonding poses a threat to the structural integrity of a sandwich component but can be controlled through design, including damage tolerance principles, and maintenance procedures. This sandwich damage mode was evident in several in-service occurrences, such as rudder structural failure. Other control surface challenges, including lost strength and fluid ingress, have had relationships with disbonding. Past studies funded by the FAA and EASA have focused on face sheet/core disbonding which can lead to damage propagation caused by internal pressure changes in the core due to ground-air-ground cycles.

Sandwich structures are also common in rotorcraft and general aviation that do not fly at high altitudes. Further, sandwich monocoque structures have failed in a way that demonstrated the need to pay particular attention to disbond damage modes in single load path primary structure applications.

Future composite structure applications, including for instance, composite sandwich construction of the fuselage of business jets that experience higher altitudes than transport aircraft and new urban mobility vertical takeoff & landing aircraft products, are also driving a need to understand the phenomenon of disbond growth under generalized load conditions including advanced maneuvers and gust conditions.

Currently, the group is working to identify sandwich structural design details where sandwich disbonds initiate and other real structure scenarios, which may promote growth. The goals of such studies is to evaluate potential sandwich disbonding and establish design guidelines that eliminate the growth potential or, at least, minimize the effect on structural integrity. We would like to invite you to participate, present and share your sandwich experience, design configurations and related lessons learned.

Our ultimate goal is to develop and provide tools to minimize sandwich disbonding and help mitigate any safety related concerns.

We hope that you or a representative from your company will be able to attend¹.

Kind Regards,

Christian Berggreen, *Technical University of Denmark (Host)*

Larry Ilcewicz, *FAA (CMH-17 Handbook Chairman)*

Simon Waite, *EASA (CMH-17 Damage Tolerance Task Group co-chair)*

Ronald Krueger, *National Institute of Aerospace (CMH-17 Disbonding and Delamination Task Group co-chair)*

Larry Gintert, *FAA Contractor (CMH-17 Sandwich Working Group co-chair)*

¹ Additional closed door meetings will be held with selected members of the CMH-17 Sandwich Disbond Development Team on Thursday (July 11, 2019) for purposes of consultation, identification of additional needs and final outcomes.