Spot heat treatment of adhesives
RISE Research Institutes of Sweden

Personnel: 2700 persons (RISE) 190 (RISE IVF)
Size 3100 MSEK

Products/Services/Technical areas

RISE is the Swedish Research Institute and innovation partner. In international collaboration with industry, academia and the public sector, we ensure the competitiveness of the business community and contribute to a sustainable society. Our 2,700 employees support and promote all manner of innovative processes. RISE is an independent, state-owned research institute that offers unique expertise and about 100 testbeds and demonstration facilities, instrumental in future-proofing technologies, products and services. www.ri.se

RISE IVF is a research institute with facilities, knowledge and long experience within the areas of adhesive bonding, especially joining of multimaterials. We are running a testbed for hybrid joining, with a combination of adhesive bonding and mechanical bonding in a robotized, industrial setting. RISE IVF has a well established collaboration with the Swedish industry, among that automotive companies, suppliers and manufacturers of adhesives and mechanical joining systems.
Vision: main project goal

The vision is to avoid time-consuming curing and use of fixtures in production. With local spotwise heat treatment by laser or induction heating the components can be locked in position and then be handled in the production chain. The complete curing and final strength is then achieved in the paint cure oven process or at room temperature.

Motivation: why the project is necessary

Adhesive bonding needs curing, which put demands on fixation and curing time. Curing speed increases at elevated temperature. By use of tape or local curing of the adhesive prolonged curing times and extensive fixturing is avoided. The joined components can then continue in the production process without seriously disrupting the cycle time.

Content: which are the developments to be made in the project

To evaluate whether it is possible to fix an adhesive bond with local locking with 2K adhesives or tape. The project will study the possibility mix different adhesive types to fixture an adhesive bond. The goal is also to make tests using local heating, primarily with single sided induction, to accelerate the curing process on the fixative 2K adhesive. Fixing with tape point wise will also be investigated. The project will provide the pros and cons of this concept and how it can be implemented in a process.
**PROPOSAL INTRODUCTION (II)**

**Expected outcome:** descriptions of the results to be obtained in the project

**Impacts:** what will be the expected market impact of the project

Investigate application areas and material combinations
Specification of requirements in industry
Built up of process equipment and process design
Parameter study and performance for relevant applications
  - Explore process limitations (Materials, heating rates, process times, etc.)
  - Test measurement techniques
  - Investigate correlation between process variables (temperature, time) and resulting curing state, material properties and surface properties
Investigate concepts for process integration
Investigate work environment

**Schedule:** 2 year project
PARTNERS

Current:

Partner search:
End users adhesive bonding
CONTACT INFO

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