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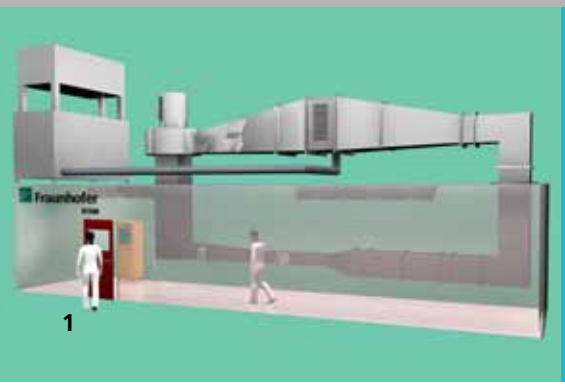
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1 *3D animation.*
2 *Test zone with integrated wing section.*
3 *External view.*

ICING LABORATORY WITH INTEGRATED WIND TUNNEL

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For aircraft, ships, rail vehicles, cars, wind turbines, refrigeration units, and air-conditioning systems – ice formation often endangers safety and incurs high repair and maintenance costs.

Preventing ice forming on surfaces is a major challenge. The Paint/Lacquer Technology department at Fraunhofer IFAM is developing a range of technologies for anti-icing and deicing. Besides requiring extensive experience developing and testing paints and coatings, this work also needs extensive tests to be performed under realistic icing conditions. Such test facilities are available at Fraunhofer IFAM. They are utilized for our own development work and for external projects with industry and other R&D organizations.

Equipment/Facilities

- Wind tunnel with temperatures down to -30 °C and controlled humidity
- Wind speeds up to 350 km/h
- Technology for defined water injection into the wind tunnel for realistic ice formation
- Icing laboratory with temperatures down to -30 °C and controlled humidity
- IR camera system for studying icing processes and the heat distribution on surfaces
- Tests for measuring ice adhesion
- Versatile adaptation of equipment and test parameters depending on require-ments