	Project sheet
Research project :	**Structural use of glass in hybrid elements: Steel-Glass-Beams, Glass-GFRP-Plates**
Images :	 © F. Wellershoff
Keywords :	Hybrid, Beam, Plate, Glass, Steel, GFRP, Adhesive
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Time span :	Since 2003
Description :	The practical use of float glass is limited to its maximum thickness and bending strength. In the last 30 years progress was achieved with tempering and laminating the glass panes. In spite of this progress multilayer glass fins are still slim if compared with steel beams and multilayer glass plates are still weak if compared with other wall structures. The development of sturdy hybrid elements with a combination of glass and other materials can fill this gap. The connections between the components of hybrid elements must be able to transmit high forces. For this reason the maximum stress in the glass components must be controlled to an allowable level. Gluing is an old method to connect components of different or of the same materials. In the mechanical engineering adhesives are already used in safety relevant parts as in the connection between the windshield glass and the body of cars.
Most important publications :	- Wellershoff, F.; Sedlacek, G.: Structural Use of Glass in Hybrid Elements: Steel-Glass-Beams, Glass-GFRP-Plates; Proceedings of the Glass Processing Days 2003, page 268-270 - Sedlacek, G.; Wellershoff, F.; Naumes, J.: Development of hybrid steel-glass-beams in respect to structural and architectural criteria; KICT research report 09-2004 - Wurm, J.; Wellershoff, F.: Glas-GFK-Sandwichplatten im Fassadenbau; Entwurf, Konstruktion und Prüfung von Glas-GFK-Sandwichplatten für den Einsatz als Fassadenelemente; Glas Architektur und Technik, Heft 2-2004, Seite 44-48

Working group :	WG 4. Novel glass assemblies
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