



# Holistic, eLearning based education on sandwich construction

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TECHNISCHE  
UNIVERSITÄT  
DARMSTADT

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**Task 5.1** E-Learning lectures on sandwich design and application

**Task 5.2** Online register for intensification of lessons






**Task 5.3** Online library providing literature for community



**Task 5.4** Standards and regulations

Dipl.-Ing. Felicitas Rädels: Thermal and structural behaviour in openings and joints - LECTURNITY Flash Player 100% EN

Übersicht Suche Info

**Felicitas\_Radel**


1		Thermal and structural behaviour in openings	0:00
2		Structure	0:35
3		Thermal behaviour in joints and openings	1:00
4		Thermal behaviour in joints and openings	2:07
5		Thermal behaviour in joints and openings	3:14

24/03/2011

## Thermal and structural behaviour in openings and joints

Dipl.-Ing. Felicitas Rädels



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0:00 / 36:04 Seite 1 von 33 LECTURNITY® webplayer

1. Introduction, General information about sandwich panels  
Applications and advantages, components and material  
also available in Polish, Finnish and German
2. Core Material – PUR/PIR  
Production, thermal properties, fire behavior, chemical properties
3. Core Material – Mineral Wool  
Production, thermal properties, fire behaviour, chemical properties
4. Load Bearing Behaviour  
Profiled and flat faces, failure modes (shear, yielding, buckling, ...)
5. Actions, loads  
Dead weight, snow, wind, temperature, safety concept

6. Long term behaviour of the panels  
Long term behaviour and design concept
7. Sustainability  
Fabrication and recycling of sandwich panels
8. Detailing 1 – good practice  
Fasteners
9. Detailing 2– good practice  
Openings, corners, verges, ridging, joints, seals
10. Formal background  
EN 14509, ECCS document, National Approvals, CE mark

## 11. Building physics

a) Thermal transmittance of sandwich panels

b) Air permeability, water permeability, airborne sound insulation  
Sound absorption

## 12. Behaviour in a Fire

## 13. Fabricating and Designing Sandwich Panels for Fire

## 14. Research and new developments in sandwich technology

## 15. Erection

Good practice

## 16. Architectural design

Examples and details

## 17. Experimental studies on durability of sandwich panels

Repair and retrofitting

## 18. Thermal and structural behaviour in openings and joints

Mechanical models

## 19. Ohutlevypintaiset sandwich-elementit (in Finnish)

Light weight sandwich panels with thin-gauge faces

Online library providing literature for community

*A list of all available literature is given on [www.easie.eu](http://www.easie.eu).*

*Currently it has 107 entries. To many of them abstracts are available.*



