

Contact person RISE

Bertil Jonsson

Building Technology

+46 10 516 51 60

bertil.jonsson@ri.se

Date

2018-07-02

Reference

7P04420-02-1T

Page

1 (2)

Tecsedo SA

Industrial Zone camp de Niscio

6534 San Vittore (Kanton Graubunden)

SWITZERLAND

## Determination of thermal transmittance of sandwich panels according to EN ISO 6946:2017

### Work requested

The client requested calculations of the  $U_p$ -value of 40mm sandwich panels from various manufactures. Drawings and nominal dimensions of the sandwich panels are provided by the client.

### Calculation and test methods

Calculation of the centre panel thermal transmittance  $U_p$  is performed according to EN ISO 6946:2017. The ageing of core insulation is taken into account according to table C.2, EN 13165:2012.

### Input data

The thermal conductivity (aged value) of the core insulation is given by Table 1. All  $\lambda$ -values is determined according to RISE report 7P04420-01-1. The thermal conductivity of steel is 50 W/(mK). The thermal surface resistance at internal and external surfaces is accounted for as  $R_{si}=0.13$  and  $R_{se}=0.04$  m<sup>2</sup>K/W.

### RISE Research Institutes of Sweden AB

Postal address

Box 857  
SE-501 15 BORÅS  
Sweden

Office location

Brinellgatan 4  
SE-504 62 BORÅS

Phone / Fax / E-mail

+46 10 516 50 00  
+46 33 13 55 02  
info@ri.se

This document may not be reproduced other than in full, except with the prior written approval of RISE.

## Calculation results

Table 1 Thickness specification, applied insulation properties and calculated thermal transmittance  $U_p$ .

Manufacturer & Product name	Nominal thickness [mm]	Thickness internal steel sheet [mm]	Thickness external steel sheet [mm]	Thermal conductivity insulation $\lambda$ [W/(mK)]	$U_p$ [W/(m <sup>2</sup> K)]
Tecsedo TBM	40.0	0.43	0.43	0.024	0.56
Tecsedo TSS / TSX	40.0	0.43	0.45	0.024	0.56

**RISE Research Institutes of Sweden AB**  
**Building Technology - Building Physics and Indoor Environment**

Performed by

Bertil Jonsson