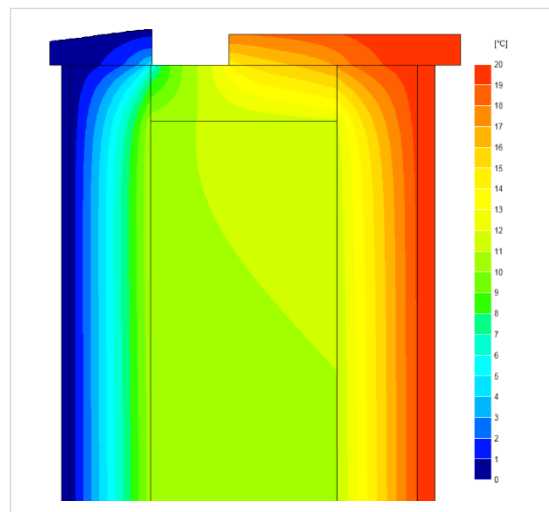
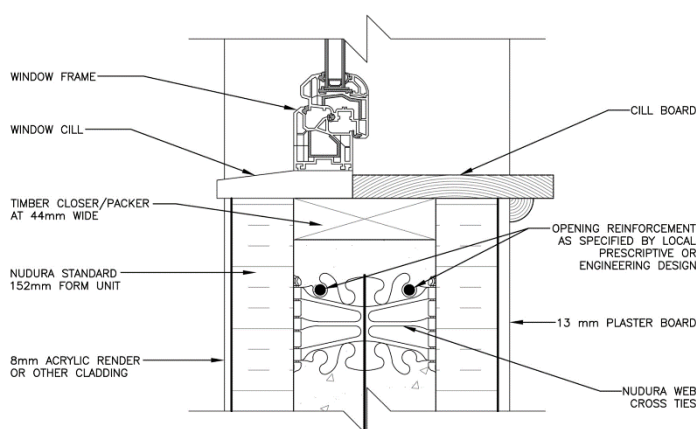


# Linear Thermal Transmittance ( $\Psi$ ) and Temperature Factor ( $f$ )



<b>Certificate :</b>	<b>WRTM – 778 CPG E3 vs. 0</b>		<b>Issued:</b>	<b>22 February 2024</b>
Issued to: Stuart Sadler  <b>Tremco CPG UK</b>  Tel: +44 1942 251400 Email: stuart.sadler@tremcocpg.com Web: www.tremcocpg.com	<b>General Construction Specification:</b> (see detail below for full construction)	<b>Main/Load-bearing:</b>	152mm (nominal) Dense Concrete Core, $\lambda \leq 2.00$	
		<b>Insulation:</b>	2x 67mm layers of EPS, $\lambda = 0.036$	
		<b>Cavity:</b>	15mm Cavity behind Brick if present	
	<b>Description:</b>  <b>Reference:</b>	<b>Cladding:</b>	9mm of Render OR 102mm Brick OR other Cladding	
			<b>ICF Wall, Cill, timber reveal closure</b>  <b>E3 Cill, Standard Wall</b>	



Temperature Distribution

**Linear Thermal Transmittance**  
**W/m.K**

**$\Psi = 0.042$**

**Temperature Factor<sup>3</sup> for Humidity  
and Mould**

**$f = 0.898$**

Calculation prepared by: Matthew Wright MA Physics (Oxon) PGCE

Notes: Calculation based upon internal heat loss areas, applicable in UK Building Regulations and SAP calculations

- $\Psi$  and  $f$  are only valid for the detail drawn and described above.
- The  $\Psi$  and  $f$  quoted are considered valid for U-value(s)  $Wall \leq 0.248 \text{ W/m}^2\text{K}$  (allowance of  $\pm 20\%$ , following the present guidance from B. Anderson, BRE, correspondence dated 24/02/2012, for the UK market). The use of different claddings may affect the U-value slightly, but will have no material impact on the calculated values used here, in this case.
- In dwellings UK regulations indicate that a temperature factor  $f$  that is  $>0.75$  would avoid the risk of mould. For other nations, jurisdictions and climates, other standards may apply. E.g. 0.65; Switzerland: 0.75; Belgium: 0.7; Germany: 0.7; Finland: 0.87. French, German and other standards often do not indicate a single number for acceptable risk, but are dependent on circumstances.
- Calculations have been performed in accordance with:
  - EN ISO 10211: 2017 Thermal bridges in building construction. Heat flows and surface temperatures. Detailed calculations
  - IP 1/06 & BR 497 : 2016 (2<sup>nd</sup> Edition) Conventions for calculating linear thermal transmittance and temperature factors
 and with reference to the following publications:
  - BS EN ISO 6946 : 2017 Building components and building elements. Thermal resistance and thermal transmittance. Calculation methods
  - BR 443 (2019 Edition) Convention for U-value calculations