Conductivity Data used in heat load calculations for AECB Gold detailing

pw 1/9/2009

| Materials | conductivity | Section:detailname | % bridging assumed |
|---|---|---|---|
| Neopourpolystyrene | 0.032 | 3:CR1 | |
| Load bearing (45kPa) polystyrene | 0.035 | 2:CF2 3:CF3 4:CF1 4:CF4 4:TW1+CF1b 4:TW1+CF1b2 | |
| Mineal Fibre Insulation | 0.038 | 2:MW2+CF2 | |
| Cellulose | 0.040 | 2:TR2ridge | |
| Insul & Fixings | 0.040 | 2:MW1 3:MW3 3:MW3 3:MW3+CiF2a 4:TW1+CF4 4:TW1+TF1 4:TW1+TiF1 4:TW1+TiF1a 4:TW1+TiF1b 4:TW1+TiF1c | |
| Insulation and ply webs | 0.041 | 2:MW2 | 12mmweb@600centres; only 200in every 1200mm; kply=0.22 W/mK |
| Insulation and ply webs | 0.041 | 4:TW1 | 12mmweb@600centres; only 300in every 800mm; kply=0.22 W/mK |
| Insulation and Ibeam web | 0.041 | 4:TF1 | 8mm Web @600cc nogins8@3000 kply=0.22 W/mK |
| Insulation and Ibeam web | 0.041 | 2:TR2 | 8mm Web @600cc no noggins OSB k=0.13W/mK |
| Insulation and Ibeam web | 0.041 | 4:TR1 | 12mm Web @600 every300/800 kply=0.22 W/mK |
| Insulation and I beam Web | 0.042 | 4:TW1 TR1 | 8mm Web @600 cc k ply=0.22 W/mK |
| Insulation and ply webs | 0.044 | 2:MW2+TR2 | 12mmweb@600centres; k ply=0.22 W/mK |
| Insulation and softwood | 0.046 | 4:TR1 4:TF1 4:TW1 TR1 | 38mm Flange @600centres k softwood = 0.13W/mK |
| Insulation and Flange | 0.047 | 4:TW1 2:MW2 | 47/50mm Flange @600centres k softwood = 0.13W/mK |
| Insulation and Flange | 0.047 | 2:MW1+TR2 2:MW2+TR2 | Flange 20mm each side + 8mm web @600cc softwood k=0.13 W/mK |
| Insulation and I beam Flange | 0.048 | 2:TR2 2:TR2ridge | 47mm Flange @600cc + 1% for noggins; k softwood 0.13 W/mK |
| Insulation and I beam Flange | 0.049 | 4:TF1 | 50mmFlange @600cc +noggins add 50/3000, k softwood 0.13 W/mK |
| Insulation and I beam Flange | 0.051 | 4:TR1 | 38mm Flange @600+ Noggins 38/600 k softwood 0.13 W/mK |
| Insulation and I beam web | 0.051 | 4:TF1 | 8mm Flange @600cc k insulation 0.05; k softwood 0.13 W/mK |
| Frame insulation | 0.054 | 4:TR1 4:TW1 TR1 | Battens and structural asume15% k softwood 0.13 W/mK |
| Frame insulation | 0.072 | 4:TW1 | Battens and structural 35% k softwood 0.13 W/mK |
| OSB lining | 0.130 | 2:TR2 2:MW2 4:TW1 4:TR1 4:TW1+TiF1 4:TW1+TiF1a 4:TW1+TiF1b | |
| Plywood | 0.130 | 4:TW1+CF4 4:TW1+TF1 | |
| Softwood | 0.130 | 2:MW1+TR2 2:MW2+TR2 2:TR2ridge 2:MW2corner 4:TF1 4:TW1+TF1 4:TW1+CF1a 4:TW1+CF1b 4:TW1+CF1b2 4:TW1+TiF1 4:TW1+TiF1b 4:TW1+TiF1c | |
| Ultra lightweight block | 0.150 | 3:MW3+CF3v2 | |
| Service cavity | 0.155 | 2:TR2 | |
| Frame void | 0.190 | 4:TW1 | |
| Plasterbrd/Skim | 0.210 | 2:TR2 4:TW1 4:TR1 4:TR1ridge | |
| Plywood heat along grain | 0.220 | 4:TW1+CF1a 4:TW1+CF1b 4:TW1+CF1b2 2:MW2corner 2:MW1+TR2 2:MW2+TR2 | |
| Ultra lightweight block | 0.240 | 4:TW1+CF1b 4:TW1+CF1b2 2:MW2+CF2 2:MW2+CF2v | |
| Frame void | 0.254 | 4:TR1 | |
| Dense Plaster | 0.570 | 2:MW1 2:MW2 2:MW1+CFi 2:MW2+CFi 3:CR1 3:MW3+CiF2a 3:MW3+CR1 | |
| Render | 0.720 | 2:MW1 3:MW3 | |
| Brick facing blocks | 0.770 | 2:MW2+CF2 | |
| Block & Mortar | 1.330 | 2:MW1 2:MW2 3:MW3 | |
| Medium conc block | 1.430 | 2:MW2+CF2 | |
| Concrete | 2.000 | 2:MW2+CF2 2:MW2+CF2v 3:MW3+CF3 | |
| Soil | 2.000 | 2:MW1+CF2 2:MW2+CF2 3:CF3 4:TW1+CF4 4:TW1+CF1a 4:TW1+CF1b | |
| Reinforced Concrete | 2.100 | 2:CF2 2:MW1+CFi 2:MW2+CFi 3:CF3 3:MW3+CiF2a 3:MW3+MW3 3:MW3+column 3:MW3+CF3 3:MW3+CR1 4:CF1 4:CF4 | |
| odd shaped cavities | various | 4:TW1+TiF1 4:TW1+TiF1a 4:TW1+TiF1b 4:TW1+TiF1c | |
| **Surface resistances** | | | |
| ext Rse | 7.690 | 2:MW2 4:TW1 | |
| lower Rs | 1000.000 | 2:CF2 4:CF1 4:CF4 | |
| ext Rse | 10.000 | 2:TR2 4:TR1 | |
| **Void temperatures** | | | |
| Int Down | 2.91C | 4:TF1 | |
| INT Down & INT Horiz | 1.8 C | 3:CF3 3:MW3+CF3 | |