

INSULATED ROOFING, WE'LL BRING THE How To.

STRATCO
COOLDEK
BEAUTIFUL INSULATED COMFORT



COOLDEK® ROOFING

DESIGN GUIDE: DOMESTIC PATIO APPLICATION

FORM AND FUNCTION

The innovative Cooldek® insulated panel provides a roof, insulation and ceiling like finish all in one product. With superior spanning capabilities, two roof profiles and five insulation thicknesses to choose from, it is an ideal solution for domestic patio roof applications.

DESIGN CONSIDERATIONS

The minimum recommended roof pitch for 'flat' verandahs shall be 1° (1 in 60) for Cooldek Classic panels and 3° (1 in 20) for Cooldek CGI panels. The maximum roof pitch for 'flat' verandahs shall be 5° (1 in 12). Care must be taken to ensure the minimum roof pitch is maintained to avoid ponding of rainwater. The roof is designed to withstand actions incidental to maintenance, roofs are not to be used for floor type activities. The design contained within these span tables relate to wind classifications N1, N2, N3, and N4 applicable to Regions A & B. Stratco does not accept liability for any loss or damage suffered as a result of any errors in the interpretation or application of these span tables.

COMPLIANCE

The Wind Capacity Tables are based on testing in accordance with AS1562.1-2018 and AS4040.0, 1 & 2-1992. Span tables have been developed by determining wind pressures in accordance with AS4055-2012 for domestic applications. Capacity tables are in limit state format.

SPANS

Spans given in Table 2.0 are determined for wind speeds for non-cyclonic areas. Spans are suitable for 'flat' roof patios unless indicated otherwise. Open freestanding unit spans can be taken from open three sides unless a wall, eaves or boundary exists within 500mm of two or more sides.

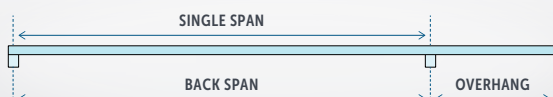
For Cooldek roofing in attached or freestanding domestic gable patio application, sheet spans shall not exceed those given for one or no open sides. Alternatively, Table 3.0 indicating wind capacities may be used to determine allowable single spans for any application.

Spans specified for units with three sides open are suitable for units considered 'empty under' and not exceeding 3 metres in height (from ground or deck level). For units in which goods or materials stored under the roof are expected to block greater than 50% of any open side exposed to the wind spans are to be taken from open two sides.

For units with two open sides, spans are based on $C_{p,n} = -1.0$ while for units with only one or no open sides, $C_{p,n} = -1.2$. In all cases, relevant consideration has been given to local pressure.

Note: Table 3.0 provides allowable wind capacities for Cooldek in single span application for serviceability and strength limit states. The pressures given may be used by a suitably qualified engineer for any single span application ensuring appropriate fixing details are applied.

SPAN DEFINITIONS



LET IN EVEN MORE LIGHT WITH COOLDEK COOL LIGHT

- Suitable for all panel profiles, thicknesses & lengths
- Easy to install
- Use on Flat & Gable applications
- 270mm wide for Cooldek Classic and Cooldek CGI

Refer Cool Light Installation Guide for further details.



COOLDEK CGI COOL LIGHT



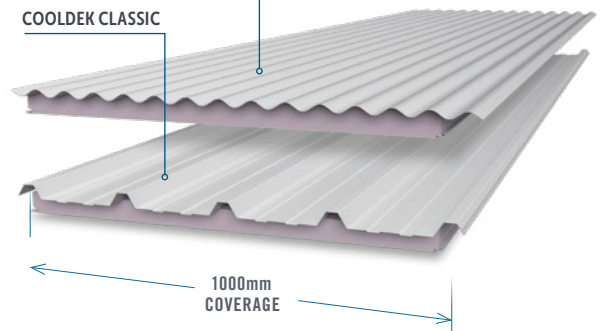
COOLDEK CLASSIC COOL LIGHT



COOLDEK PANEL OPTIONS

COOLDEK CGI

COOLDEK CLASSIC



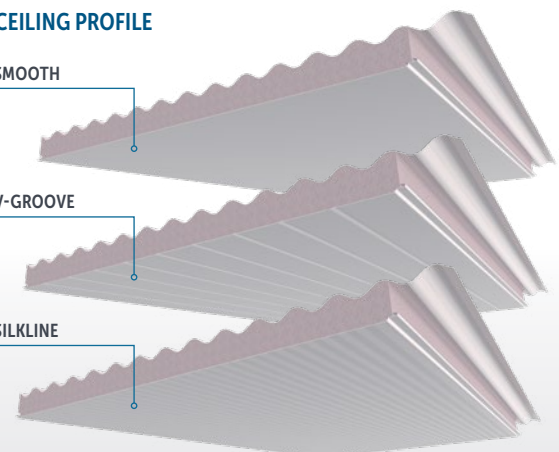
Both profiles are available in 50, 75, 100, 125 or 150mm insulation thickness

CEILING PROFILE

SMOOTH

V-GROOVE

SILKLINE



MATERIAL SPECIFICATIONS

TABLE 1.0

| Material Properties | | Cooldek Classic | Cooldek CGI |
|---------------------------------------|----------------------|-------------------------------------|-------------|
| Base Metal Thickness & Material Grade | Top Skin | 0.42mm/G550 | 0.42mm/G550 |
| | Bottom Skin | 0.60mm/G300 | 0.60mm/G300 |
| Mass (kg/linear metre) | 50mm Panel | 9.5 | 9.6 |
| | 75mm Panel | 9.8 | 9.9 |
| | 100mm Panel | 10.1 | 10.2 |
| | 125mm Panel | 10.4 | 10.5 |
| | 150mm Panel | 10.7 | 10.8 |
| R Value (m2K/W) at 14°C mean temp. | 50mm Panel | 1.24 | 1.42 |
| | 75mm Panel | 1.82 | 2.16 |
| | 100mm Panel | 2.46 | 2.77 |
| | 125mm Panel | 3.10 | 3.41 |
| | 150mm Panel | 3.73 | 4.04 |
| Width Coverage (mm) | | 1000 | 1000 |
| Minimum Roof Pitch | | 1° | 3° |
| Core | Material | SL Grade EPS (expanded polystyrene) | |
| | Thermal Conductivity | 0.037 W/mK (0°C mean temp.) | |

NOTE: All Cooldek sheets are provided at minimum length of 2000mm. Where Cooldek sheets of less than 2000mm are required they will need to be cut on site.

| Panel Thickness | Max Deck Overhang (mm) | | | |
|-----------------|------------------------|----------|----------|----------|
| | N1 (W28) | N2 (W33) | N3 (W41) | N4 (W50) |
| 50mm | 900 | 900 | 900 | 300 |
| 75mm | 900 | 900 | 900 | 600 |
| 100mm | 1200 | 1200 | 900 | 600 |
| 125mm | 1500 | 1500 | 1200 | 900 |
| 150mm | 1800 | 1800 | 1500 | 900 |

TABLE 2.0 - SINGLE SPANS (mm) - Domestic Patio Application

| | | COOLDEK CLASSIC | | | |
|-------------------------|-----------------|-----------------|----------|-------------|-------------|
| Open Sides | Panel Thickness | N1 (W28) | N2 (W33) | N3 (W41) | N4 (W50) |
| Three | 50mm | 5400 | 5400 | 5400 | 4200 |
| | 75mm | 6600 | 6600 | 6000 | 4800 |
| | 100mm | 9000 | 8750 | 7200 | 5350 |
| | 125mm | 10200 | 10200 | 7900 | 6350 |
| | 150mm | 10800 | 10500 | 8150 | 6550 |
| Two | 50mm | 5400 | 5400 | 3900 | 3300 (3200) |
| | 75mm | 6600 | 5500 | 4800 (4400) | 3900 (3000) |
| | 100mm | 8100 | 6900 | 5150 (5000) | 4100 (3300) |
| | 125mm | 9050 | 7600 | 6000 | 4800 |
| | 150mm | 9450 | 7850 | 6000 | 5000 (4800) |
| One/None or Gable Patio | 50mm | 5400 | 4500 | 3300 | 3000 (2500) |
| | 75mm | 6000 | 4800 | 3900 (3300) | 3300 (2200) |
| | 100mm | 7350 | 6150 | 4700 (3800) | 3750 (2500) |
| | 125mm | 8250 | 6950 | 5500 | 4350 (3600) |
| | 150mm | 8550 | 7200 | 5700 (5000) | 4350 (3600) |
| | | COOLDEK CGI | | | |
| Open Sides | Panel Thickness | N1 (W28) | N2 (W33) | N3 (W41) | N4 (W50) |
| Three | 50mm | 5400 | 5400 | 5100 | 3900 |
| | 75mm | 6600 | 6600 | 6000 | 4800 (3900) |
| | 100mm | 8850 | 7900 | 6850 | 5800 |
| | 125mm | 10200 | 8950 | 7150 | 6000 |
| | 150mm | 10800 | 9250 | 7600 | 6350 |
| Two | 50mm | 5400 | 5100 | 3600 | 3000 |
| | 75mm | 6600 | 5700 | 4800 | 3900 (3000) |
| | 100mm | 7400 | 6650 | 5150 | 4100 |
| | 125mm | 8150 | 7100 | 5700 | 4750 |
| | 150mm | 8550 | 7350 | 6000 | 5050 (4800) |
| One/None or Gable Patio | 50mm | 5400 | 4500 | 3300 | 3000 (2000) |
| | 75mm | 6300 | 5100 | 3900 | 3300 (2100) |
| | 100mm | 7050 | 6150 | 4750 | 3700 |
| | 125mm | 7450 | 6500 | 5300 | 4350 |
| | 150mm | 7900 | 6850 | 5600 | 4700 (4400) |

NOTE: IF values are shown in brackets they represent the maximum allowable span if an overhang is used. The cladding back span shall be no less than 1.5 times the deck overhang.

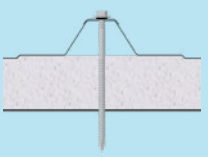
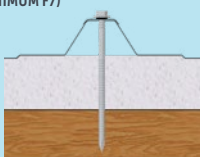
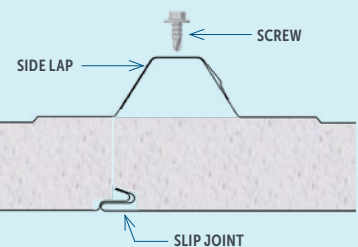
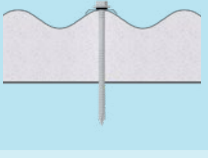
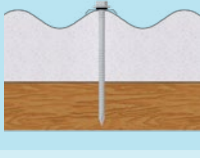
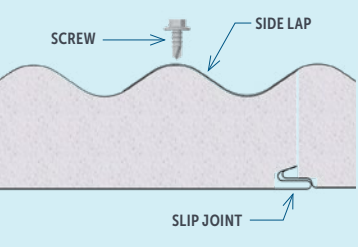
TABLE 3.0 - SINGLE SPAN WIND CAPACITIES (kPa)

| Profile | Panel Thickness | Limit State | SPAN (mm) | | | | | | | | | | | | | | | | | |
|---------|-----------------|----------------|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|---|---|
| | | | 1800 | 2400 | 3000 | 3600 | 4200 | 4800 | 5400 | 6000 | 6600 | 7200 | 7800 | 8400 | 9000 | 9600 | 10200 | 10800 | | |
| Classic | 50mm | Serviceability | 3.80 | 2.69 | 2.06 | 1.66 | 1.38 | 1.18 | 1.02 | - | - | - | - | - | - | - | - | - | - | |
| | | Strength | 6.70 | 4.50 | 3.30 | 2.56 | 2.07 | 1.72 | 1.46 | - | - | - | - | - | - | - | - | - | - | |
| | 75mm | Serviceability | - | 4.86 | 3.43 | 2.58 | 2.02 | 1.64 | 1.37 | 1.16 | 1.00 | - | - | - | - | - | - | - | - | |
| | | Strength | - | 5.11 | 3.63 | 2.75 | 2.17 | 1.77 | 1.48 | 1.26 | 1.08 | - | - | - | - | - | - | - | - | |
| | 100mm | Serviceability | - | - | 3.60 | 2.81 | 2.25 | 1.84 | 1.52 | 1.32 | 1.18 | 1.04 | 0.93 | 0.80 | 0.69 | - | - | - | - | |
| | | Strength | - | - | 4.59 | 3.50 | 2.70 | 2.20 | 1.68 | 1.57 | 1.34 | 1.17 | 1.03 | 0.85 | 0.73 | - | - | - | - | |
| | 125mm | Serviceability | - | - | 3.88 | 3.23 | 2.61 | 2.17 | 1.85 | 1.60 | 1.40 | 1.24 | 1.11 | 1.00 | 0.91 | 0.84 | 0.77 | - | - | |
| | | Strength | - | - | 6.49 | 4.73 | 3.62 | 2.87 | 2.34 | 1.95 | 1.65 | 1.42 | 1.24 | 1.09 | 0.96 | 0.86 | 0.78 | - | - | |
| | 150mm | Serviceability | - | - | 5.38 | 4.12 | 3.20 | 2.60 | 2.27 | 1.95 | 1.70 | 1.49 | 1.31 | 1.16 | 1.03 | 0.92 | 0.83 | 0.75 | - | |
| | | Strength | - | - | 6.74 | 4.94 | 3.70 | 3.00 | 2.47 | 2.06 | 1.75 | 1.51 | 1.31 | 1.16 | 1.03 | 0.92 | 0.83 | 0.75 | - | |
| | CGI | 50mm | Serviceability | 3.72 | 2.62 | 1.99 | 1.60 | 1.32 | 1.13 | 0.97 | - | - | - | - | - | - | - | - | - | - |
| | | | Strength | 6.78 | 4.47 | 3.24 | 2.49 | 1.99 | 1.64 | 1.38 | - | - | - | - | - | - | - | - | - | - |
| 75mm | | Serviceability | - | 3.81 | 2.86 | 2.27 | 1.86 | 1.57 | 1.35 | 1.18 | 1.04 | - | - | - | - | - | - | - | - | |
| | | Strength | - | 5.84 | 4.15 | 3.14 | 2.48 | 2.02 | 1.69 | 1.44 | 1.24 | - | - | - | - | - | - | - | - | |
| 100mm | | Serviceability | - | - | 3.73 | 2.91 | 2.31 | 1.89 | 1.58 | 1.35 | 1.17 | 1.03 | 0.91 | 0.80 | 0.69 | - | - | - | - | |
| | | Strength | - | - | 3.90 | 3.34 | 2.83 | 2.37 | 1.95 | 1.59 | 1.28 | 1.02 | 0.81 | 0.65 | 0.54 | - | - | - | - | |
| 125mm | | Serviceability | - | - | 3.79 | 2.86 | 2.25 | 1.82 | 1.52 | 1.29 | 1.11 | 0.99 | 0.86 | 0.76 | 0.68 | 0.62 | 0.56 | - | - | |
| | | Strength | - | - | 7.19 | 4.95 | 3.62 | 2.76 | 2.18 | 1.76 | 1.45 | 1.21 | 1.03 | 0.89 | 0.77 | 0.68 | 0.60 | - | - | |
| 150mm | | Serviceability | - | - | 5.28 | 3.55 | 2.58 | 2.10 | 1.95 | 1.63 | 1.39 | 1.20 | 1.05 | 0.92 | 0.81 | 0.74 | 0.67 | 0.60 | - | |
| | | Strength | - | - | 8.42 | 6.00 | 5.0 | 3.10 | 2.42 | 1.96 | 1.62 | 1.36 | 1.16 | 1.00 | 0.81 | 0.75 | 0.68 | 0.61 | - | |

Unless indicated otherwise, the values in the above tables are for use with steel supports of minimum thickness 1.0mm BMT, G550, or timber supports. For 100mm Cooldek panel thickness, over 7200mm single span, and for all 125 & 150mm panels, steel supports shall be minimum 1.5mm BMT, G450. Fixing details as specified in 'Fixing Recommendations'.

FIXING RECOMMENDATIONS

Cooldek roofing should be laid into the prevailing wind and sit neatly on the preceding roof sheet. For Classic profile fasten through each crest and for CGI profile fasten through every second crest. Use cyclone caps and neoprene washers in all crest fixings. Fix side laps with 12x20mm hex head screws with neoprene washers at approximately 1000mm centres, refer below.

| | | FASTENER SIZE SELECTION | | LAPPING |
|---|--|---|---|-------------------------|
| COOLDEK CLASSIC Crest Fixing Only One fixing required per crest | FIXING TO STEEL  Panel Thickness | FIXING TO TIMBER (MINIMUM F7)  Panel Thickness |  SIDE LAP SCREW SLIP JOINT | |
| | 50mm | 14-14x125 Hex Head Screw | 50mm | 14-10x125 Type 17 Screw |
| | 75mm | 14-14x150 Hex Head Screw | 75mm | 14-10x150 Type 17 Screw |
| | 100mm | 14-14x175 Hex Head Screw | 100mm | 14-10x175 Type 17 Screw |
| | 125mm | 14-14x205 Hex Head Screw | 125mm | 14-10x200 Type 17 Screw |
| | 150mm | 14-14x230 Hex Head Screw | 150mm | 14-10x230 Type 17 Screw |
| COOLDEK CGI Crest Fixing Only One fixing required every second crest |  Panel Thickness |  Panel Thickness |  SCREW SIDE LAP SLIP JOINT | |
| | 50mm | 14-14x110 Hex Head Screw | 50mm | 14-10x110 Type 17 Screw |
| | 75mm | 14-14x125 Hex Head Screw | 75mm | 14-10x150 Type 17 Screw |
| | 100mm | 14-14x150 Hex Head Screw | 100mm | 14-10x175 Type 17 Screw |
| | 125mm | 14-14x175 Hex Head Screw | 125mm | 14-10x200 Type 17 Screw |
| | 150mm | 14-14x205 Hex Head Screw | 150mm | 14-10x230 Type 17 Screw |

WALKING ON COOLDEK

When walking on Cooldek roofing, it is recommended you walk over the support beam to avoid damage. Wear flat, rubber soled shoes and walk flat footed in the sheet pans for Classic, and with your weight spread over as many crests as possible for CGI. For carport and verandah applications, away from supports, crawl boards should be used to avoid damage during installation and maintenance.

MAINTENANCE

The performance of Cooldek over time depends on its correct application and maintenance. Maintenance should be performed as often as is required to remove dirt, salt and pollutants. Where used in severely corrosive environments, cleaning should be performed more often. It is important that screws have the same life expectancy as the cladding you have specified.

Packs of Cooldek should always be kept dry and stored above ground level while on site. If the sheets have become wet, they should be separated, wiped and placed in the open to dry.

Refer to Stratco 'Selection, Use and Maintenance' brochure, for more detailed information about the correct use and maintenance of this product.



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