



Fully compliant with The Building (Amendment) Regulations 2018:

The Government's ban on combustible materials in external walls, following a review of fire safety in high-rise residential buildings



100% Class A1 Non-Combustible Components

Ancon[®]

Isotec Thermally Insulated Balcony Connectors

for Concrete-to-Concrete
Applications



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Leviat is the new name of CRH's construction accessories companies worldwide.

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people worldwide

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Ancon Isotec

Isotec is a high performance thermal break system for concrete-to-concrete applications. It is particularly suitable for highly energy-efficient structures, heavily congested or stepped floor slabs where compression bars would be difficult to accommodate.

Each unit is manufactured as a non-deformable cage offering high rigidity and dimensional stability.

Brochures are available for the full range of products in the Ancon Insulated Balcony Connector portfolio, including:

- Ancon STS/SSTS - connecting steel balconies to structural steel frames
- Ancon STC/SSTC - anchoring steel balconies to concrete floor slabs

Contents

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System Components

Material Combustibility

Following a review of fire safety, the Government has banned the use of combustible materials in the external walls of high-rise residential buildings in England.

Ancon Isotec connectors are fully compliant with the material combustibility requirements of The Building (Amendment) Regulations 2018. All components are European classification A1 and will not contribute to a fire at any stage, even a fully developed fire. Contact Leviat for further information.

System Benefits

- ✓ Inherently fire-resistant mineral wool insulation
- ✓ Formed from 100% Class A1 non-combustible components
- ✓ Compression studs reduce rebar congestion and simplify installation
- ✓ Continuous stainless steel reinforcement maximises strength, thermal efficiency and corrosion protection
- ✓ Supplied as a complete unit providing rigidity and dimensional stability
- ✓ Extensive product line to suit a wide range of applications

Reinforcement

Tensile and shear reinforcement consist of either 1.4301 or 1.4362 highly corrosion-resistant stainless steel, with a minimum characteristic strength $R_{p0.2}$ of 500 N/mm². Tensile bars are continuous with no structural welding or point of weakness. Compression studs are manufactured from 12mm diameter, high resistance 1.4301 stainless steel bars with hot-forged heads.

Stainless steel is three times more thermally efficient than carbon steel. In addition to thermal and durability benefits, stainless steel reinforcement reduces concrete cover requirements and can therefore provide additional design efficiencies over carbon steel systems.

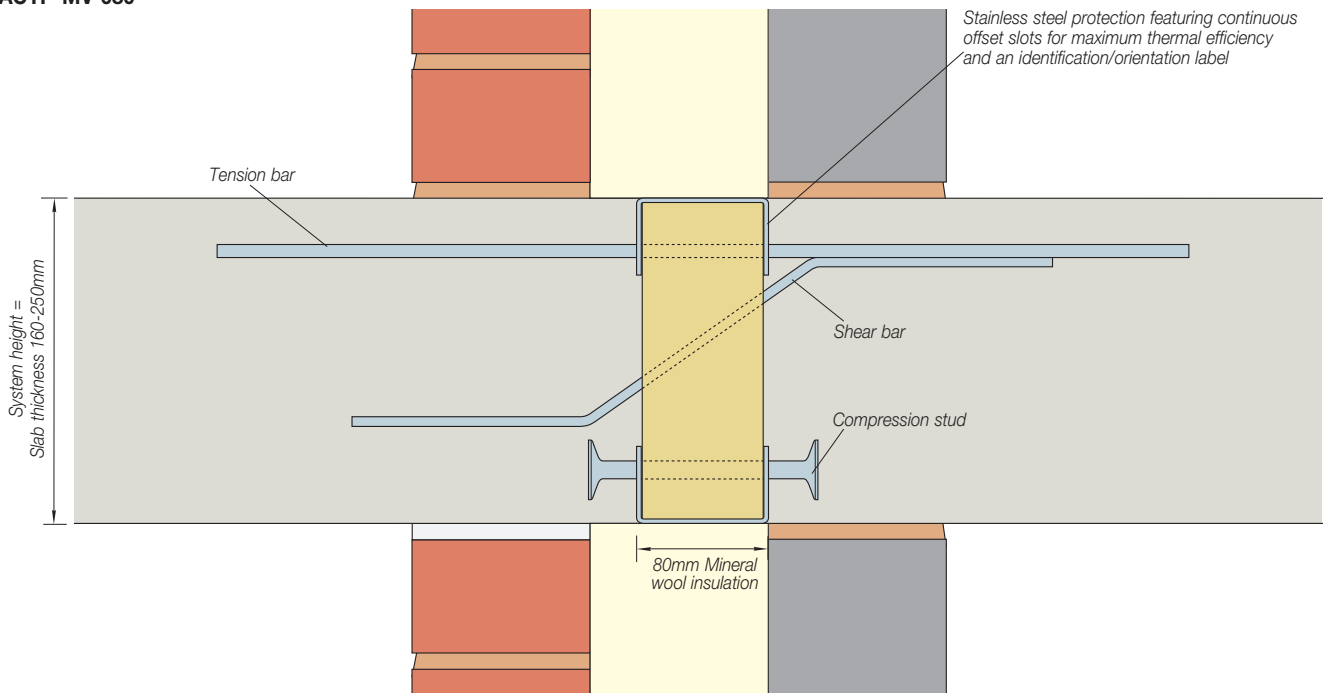
Insulation

Fire-resistant ROCKWOOL® mineral wool insulation is protected by a stainless steel U-shaped profile top and bottom. Continuous offset slots reduce the cross-sectional area of steel used, minimising the thermal conductivity of this Class A1 non-combustible component. A label is affixed to the top identifying the system type and direction of placement.

| | |
|------------------|---|
| Thickness: | 80mm |
| Unit Length: | 1000mm/500mm |
| Density: | 100 kg/m ³ minimum |
| ψ : | 0.3 to 0.18 W/mK (depending on construction) |
| Fire resistance: | 120 minutes as assessed by CSTB |

Isotec Types and Applications

ACTP-MV-080

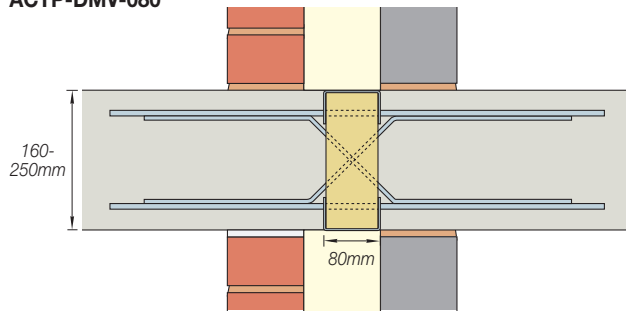


Slab to slab transfer of bending moment and shear forces

Thermally Insulated Balcony Connectors

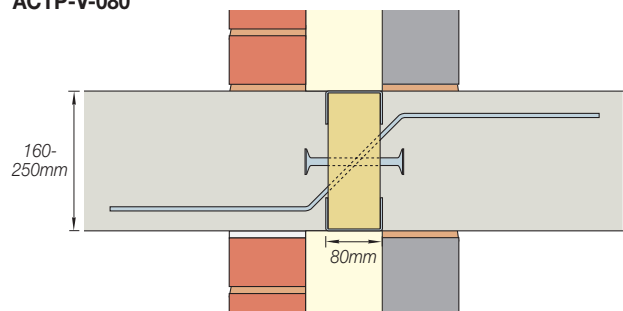
Isotec Types and Applications

ACTP-DMV-080



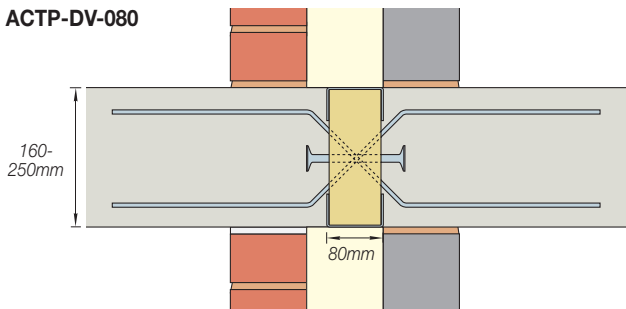
Slab to slab at same level, transfer of bending moment and shear forces, both positive and negative

ACTP-V-080



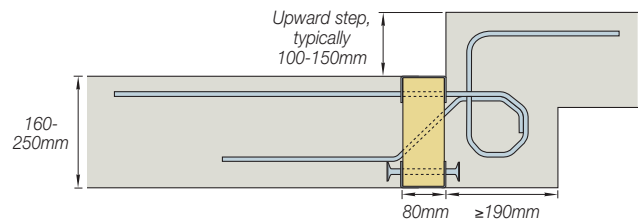
Slab to slab at same level transfer of shear forces only

ACTP-DV-080



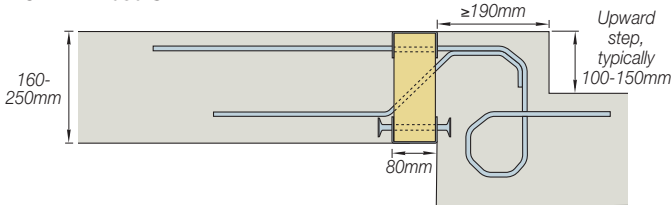
Slab to slab at same level, transfer of shear forces, positive and negative

ACTP-MV-080 SH



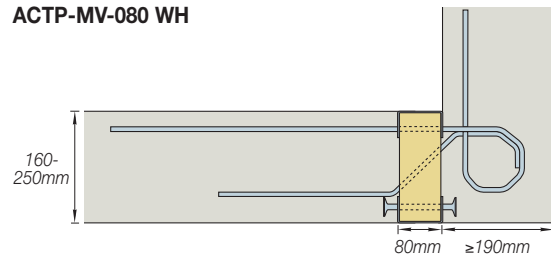
Slab to slab with 100mm or 150mm level difference in slab

ACTP-MV-080 SB



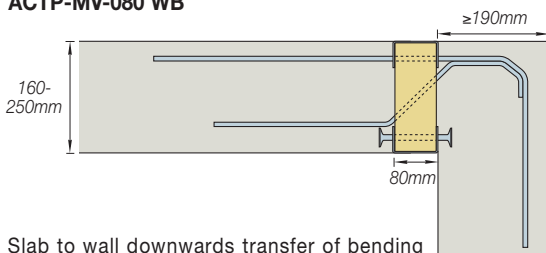
Slab to wall, downwards transfer of bending moment and shear forces

ACTP-MV-080 WH



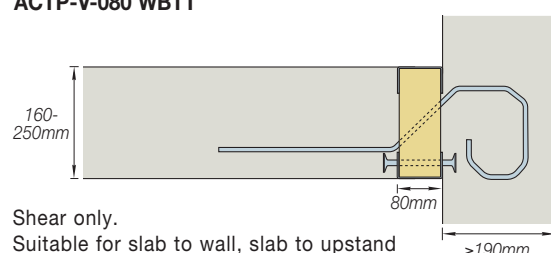
Slab to wall, upwards transfer of bending moment and shear forces

ACTP-MV-080 WB



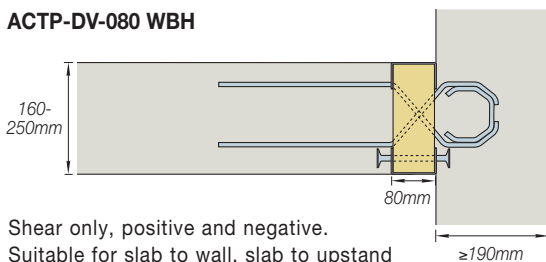
Slab to wall downwards transfer of bending moment and shear forces

ACTP-V-080 WBTT



Shear only.
Suitable for slab to wall, slab to upstand beam and slab to downstand beam connections

ACTP-DV-080 WBH



Shear only, positive and negative.
Suitable for slab to wall, slab to upstand beam and slab to downstand beam connections.

ACTP-00-080



Non structural thermal break
Suitable for installation infill and top-up strips

Notes: The tables use concrete grade C30/37 and 30mm cover - for lower concrete grade, please contact Ancon. The design resistances given are per unit (see unit length). All sketches show the balcony on the left hand side and the main slab on the right.

Design Resistances

Instructions for Lookup Table

The tables on the following pages help determine the appropriate Ancon Isotec System Type (MV, DMV etc) and exact product specification for your project. Identify the relevant table title from the types and applications on pages 3 and 4 and, in the left hand column of that table, find the relevant slab depth (h) for your project and follow the row across until you find the applicable Design Resistance figure. Follow the column upwards to find the resultant Design Capacity Type (e.g. 01, 02, 03...).

| Ancon Isotec Product Specification Structure | | | | |
|--|-------------|-------------------------------|----------------|-----------------------------|
| ACTP- | MV- | 080- | 200- | 03 |
| Standard Isotec Code | System Type | Standard Insulation Thickness | Slab Depth (h) | Design Capacity (see Table) |

Isotec Type ACTP-MV-080

| Design Capacity Type | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | | | | | | | | | | | | | | | | | | | | |
|----------------------|-------------------|------------------|---------|---------|---------|-------|-------|-------|-------|-------|-------|-------|-------|---------|---------|---------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Tension Bars | 4Ø8 | 6Ø8 | 6Ø8 | 8Ø8 | 8Ø8 | 10Ø8 | 6Ø10 | 6Ø12 | 10Ø10 | 8Ø12 | 12Ø10 | 10Ø12 | 10Ø12 | 10Ø12 | 12Ø12 | 12Ø12 | 12Ø12 | 14Ø12 | 14Ø12 | | | | | | | | | | | | | | | | | | | | |
| Compression Bars | 4Ø12 | 4Ø12 | 4Ø12 | 6Ø12 | 6Ø12 | 6Ø12 | 6Ø12 | 8Ø12 | 8Ø12 | 10Ø12 | 10Ø12 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | | | | | | | | | | | | | | | | | | | | |
| Shear Bars | 4Ø6 | 4Ø6 | 6Ø6 | 4Ø6 | 6Ø6 | 4Ø8 | 6Ø8 | 4Ø8 | 6Ø8 | 4Ø8 | 6Ø8 | 4Ø8 | 6Ø8 | 8Ø8 | 4Ø8 | 6Ø8 | 8Ø8 | 6Ø8 | 8Ø8 | | | | | | | | | | | | | | | | | | | | |
| Ls (mm) | 430 | 430 | 430 | 430 | 430 | 430 | 530 | 680 | 530 | 680 | 530 | 680 | 680 | 680 | 680 | 680 | 680 | 680 | 680 | | | | | | | | | | | | | | | | | | | | |
| Unit Length (mm) | 1000 | | | | | | | | | | | 1000 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design Resistance | Slab Depth h (mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | M_{Rd} (kNm/m) | 160 | 170 | 180 | 190 | 200 | 210 | 220 | 230 | 240 | 250 | 160 | 170-180 | 190-200 | 210-220 | 230-250 | 8.06 | 12.00 | 12.09 | 15.93 | 16.03 | 20.21 | 17.88 | 26.69 | 26.42 | 35.34 | 33.97 | 43.47 | 43.82 | 44.16 | 52.03 | 52.37 | 52.72 | 60.93 | 59.09 | | | |
| V_{Rd} (kN/m) | 160 | 170-180 | 190-200 | 210-220 | 230-250 | 31.61 | 34.77 | 34.77 | 52.16 | 34.77 | 52.16 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 31.61 | 34.77 | 34.77 | 52.16 | 34.77 | 52.16 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 |

ACTP-MV-80 Types 12 to 19 feature a continuous welded plate.

Notes: All sketches show the balcony on the left hand side and the main slab on the right.

The tables use concrete grade C30/37 and 30mm cover - for lower concrete grade, please contact Ancon. The design resistances given are per unit (see unit length). The tables provide design capacities for standard 80mm thick Isotec elements. Special 120mm thick Ancon Isotec elements with enhanced thermal properties may also be designed and manufactured by Leviat upon request: please contact us for further information.

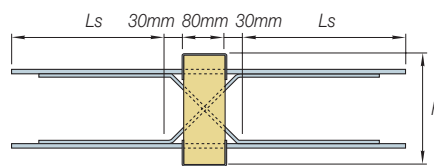
Thermally Insulated Balcony Connectors

Ancon Isotec Product Specification Structure

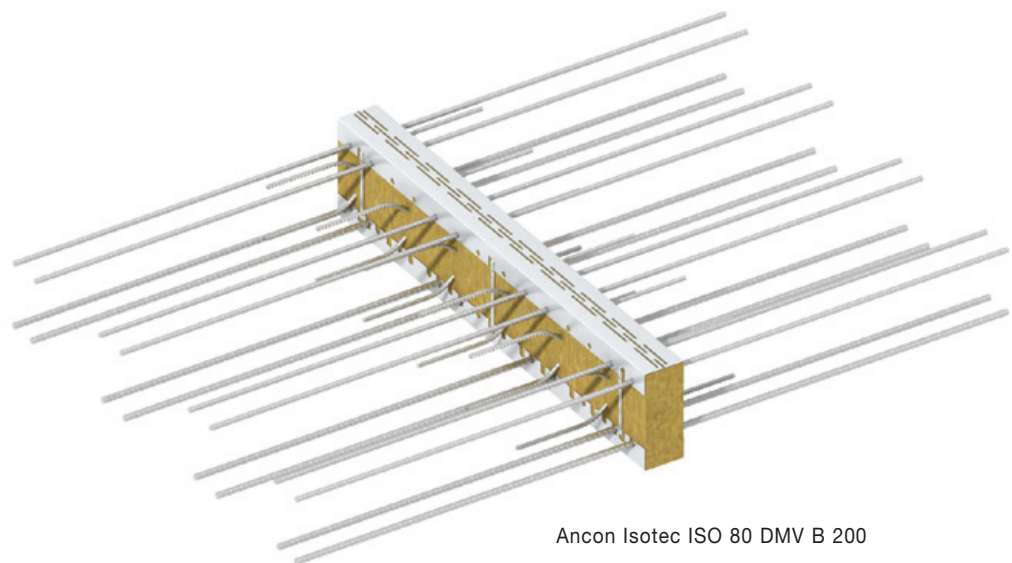
| ACTP- | DMV- | 080- | 200- | 03 |
|----------------------|-------------|-------------------------------|----------------|-----------------------------|
| Standard Isotec Code | System Type | Standard Insulation Thickness | Slab Depth (h) | Design Capacity (see Table) |

Isotec Type ACTP-DMV-080

| Design Capacity Type | 03 | 05 | 08 | 11 | 13 | 16 | 18 |
|----------------------|---------|---------|---------|---------|---------|---------|---------|
| Tension Bars | 6Ø8 | 8Ø8 | 6Ø12 | 8Ø12 | 10Ø12 | 12Ø12 | 14Ø12 |
| Compression Bars | 6Ø8 | 8Ø8 | 6Ø12 | 8Ø12 | 10Ø12 | 12Ø12 | 14Ø12 |
| Shear Bars | 2 x 6Ø6 | 2 x 6Ø6 | 2 x 4Ø8 | 2 x 6Ø8 | 2 x 6Ø8 | 2 x 6Ø8 | 2 x 6Ø8 |
| Ls (mm) | 430 | 430 | 680 | 680 | 680 | 680 | 680 |
| Unit Length (mm) | 1000 | | | | | | |



| Design Resistance | Slab Depth h (mm) | Design Capacity | | | | | | |
|--------------------------|-------------------|-----------------|-----------|-----------|-----------|-----------|-----------|------------|
| | | 03 | 05 | 08 | 11 | 13 | 16 | 18 |
| MV _{Rd} (kNm/m) | 160 | +/- 6.26 | +/- 9.97 | +/- 19.77 | +/- 25.43 | +/- 33.88 | +/- 42.33 | +/- 50.77 |
| | 170 | +/- 7.16 | +/- 11.26 | +/- 22.20 | +/- 28.59 | +/- 38.00 | +/- 47.41 | +/- 56.82 |
| | 180 | +/- 8.08 | +/- 12.59 | +/- 24.71 | +/- 31.89 | +/- 42.26 | +/- 52.63 | +/- 62.99 |
| | 190 | +/- 9.00 | +/- 13.91 | +/- 27.26 | +/- 35.22 | +/- 46.55 | +/- 57.88 | +/- 69.21 |
| | 200 | +/- 9.92 | +/- 15.24 | +/- 29.80 | +/- 38.55 | +/- 50.84 | +/- 63.13 | +/- 75.42 |
| | 210 | +/- 10.84 | +/- 16.56 | +/- 32.34 | +/- 41.88 | +/- 55.13 | +/- 68.38 | +/- 81.63 |
| | 220 | +/- 11.76 | +/- 17.89 | +/- 34.88 | +/- 45.21 | +/- 59.42 | +/- 73.63 | +/- 87.84 |
| | 230 | +/- 12.68 | +/- 19.21 | +/- 37.42 | +/- 48.54 | +/- 63.71 | +/- 78.88 | +/- 94.05 |
| | 240 | +/- 13.61 | +/- 20.53 | +/- 39.96 | +/- 51.87 | +/- 68.00 | +/- 84.13 | +/- 100.26 |
| | 250 | +/- 14.53 | +/- 21.86 | +/- 42.50 | +/- 55.20 | +/- 72.29 | +/- 89.38 | +/- 106.47 |
| V _{Rd} (kN/m) | 160 | +/- 47.41 | +/- 47.41 | +/- 50.14 | +/- 75.21 | +/- 75.21 | +/- 75.21 | +/- 75.21 |
| | 170-180 | +/- 52.16 | +/- 52.16 | +/- 56.19 | +/- 84.29 | +/- 84.29 | +/- 84.29 | +/- 84.29 |
| | 190-200 | +/- 52.16 | +/- 52.16 | +/- 61.81 | +/- 92.72 | +/- 92.72 | +/- 92.72 | +/- 92.72 |
| | 210-220 | +/- 52.16 | +/- 52.16 | +/- 61.81 | +/- 92.72 | +/- 92.72 | +/- 92.72 | +/- 92.72 |
| | 230-250 | +/- 52.16 | +/- 52.16 | +/- 61.81 | +/- 92.72 | +/- 92.72 | +/- 92.72 | +/- 92.72 |



Ancon Isotec ISO 80 DMV B 200

Notes: All sketches show the balcony on the left hand side and the main slab on the right.

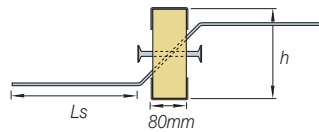
The tables use concrete grade C30/37 and 30mm cover - for lower concrete grade, please contact Ancon. The design resistances given are per unit (see unit length). The tables provide design capacities for standard 80mm thick Isotec elements. Special 120mm thick Ancon Isotec elements with enhanced thermal properties may also be designed and manufactured by Leviat upon request: please contact us for further information.

Ancon Isotec Product Specification Structure

| | | | | |
|----------------------|-------------|-------------------------------|----------------|-----------------------------|
| ACTP- | V- | 080- | 200- | 53 |
| Standard Isotec Code | System Type | Standard Insulation Thickness | Slab Depth (h) | Design Capacity (see Table) |

Isotec Type ACTP-V-080

| Design Capacity Type | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | |
|------------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Compression Bars | 2Ø12 | 4Ø12 | 2Ø12 | 4Ø12 | 2Ø12 | 2Ø12 | 4Ø12 | 4Ø12 | 4Ø12 | 4Ø12 | |
| Shear Bars | 4Ø6 | 4Ø6 | 6Ø6 | 6Ø6 | 8Ø6 | 10Ø6 | 6Ø8 | 8Ø8 | 6Ø10 | 8Ø10 | |
| Ls (mm) | 340 | 340 | 340 | 340 | 340 | 340 | 455 | 455 | 565 | 565 | |
| Unit Length (mm) | 1000 | | | | | | | | | | |
| Design Resistance | Slab Depth h (mm) | | | | | | | | | | |
| | | | | | | | | | | | |
| V _{Rd} (kN/m) | 160 | 31.61 | 31.61 | 47.41 | 47.41 | 63.22 | 79.02 | 75.21 | 100.28 | 117.52 | 156.69 |
| | 170-180 | 34.77 | 34.77 | 52.16 | 52.16 | 69.54 | 86.93 | 84.29 | 112.38 | 117.52 | 156.69 |
| | 190-200 | 34.77 | 34.77 | 52.16 | 52.16 | 69.54 | 86.93 | 92.72 | 123.63 | 131.70 | 175.60 |
| | 210-220 | 34.77 | 34.77 | 52.16 | 52.16 | 69.54 | 86.93 | 92.72 | 123.63 | 144.88 | 193.17 |
| | 230-250 | 34.77 | 34.77 | 52.16 | 52.16 | 69.54 | 86.93 | 92.72 | 123.63 | 144.88 | 193.17 |

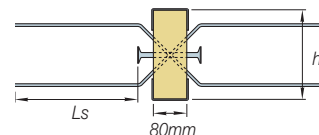


Ancon Isotec Product Specification Structure

| | | | | |
|----------------------|-------------|-------------------------------|----------------|-----------------------------|
| ACTP- | DV- | 080- | 200- | 03 |
| Standard Isotec Code | System Type | Standard Insulation Thickness | Slab Depth (h) | Design Capacity (see Table) |

Isotec Type ACTP-DV-080

| Design Capacity Type | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | |
|------------------------|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| Compression Bars | 2Ø12 | 4Ø12 | 2Ø12 | 4Ø12 | 2Ø12 | 2Ø12 | 4Ø12 | 4Ø12 | 4Ø12 | 4Ø12 | |
| Shear Bars | 2 x 4Ø6 | 2 x 4Ø6 | 2 x 6Ø6 | 2 x 6Ø6 | 2 x 8Ø6 | 2 x 10Ø6 | 2 x 6Ø8 | 2 x 8Ø8 | 2 x 6Ø10 | 2 x 8Ø10 | |
| Ls (mm) | 340 | 340 | 340 | 340 | 340 | 340 | 455 | 455 | 565 | 565 | |
| Unit Length (mm) | 1000 | | | | | | | | | | |
| Design Resistance | Slab Depth h (mm) | | | | | | | | | | |
| | | | | | | | | | | | |
| V _{Rd} (kN/m) | 160 | +/- 31.61 | +/- 31.61 | +/- 47.41 | +/- 47.41 | +/- 63.22 | +/- 79.02 | +/- 75.21 | +/- 100.28 | +/- 117.52 | +/- 156.69 |
| | 170-180 | +/- 34.77 | +/- 34.77 | +/- 52.16 | +/- 52.16 | +/- 69.54 | +/- 86.93 | +/- 84.29 | +/- 112.38 | +/- 117.52 | +/- 156.69 |
| | 190-200 | +/- 34.77 | +/- 34.77 | +/- 52.16 | +/- 52.16 | +/- 69.54 | +/- 86.93 | +/- 92.72 | +/- 123.63 | +/- 131.70 | +/- 175.60 |
| | 210-220 | +/- 34.77 | +/- 34.77 | +/- 52.16 | +/- 52.16 | +/- 69.54 | +/- 86.93 | +/- 92.72 | +/- 123.63 | +/- 144.88 | +/- 193.17 |
| | 230-250 | +/- 34.77 | +/- 34.77 | +/- 52.16 | +/- 52.16 | +/- 69.54 | +/- 86.93 | +/- 92.72 | +/- 123.63 | +/- 144.88 | +/- 193.17 |



Notes: All sketches show the balcony on the left hand side and the main slab on the right.

The tables use concrete grade C30/37 and 30mm cover - for lower concrete grade, please contact Ancon. The design resistances given are per unit (see unit length). The tables provide design capacities for standard 80mm thick Isotec elements. Special 120mm thick Ancon Isotec elements with enhanced thermal properties may also be designed and manufactured by Leviat upon request: please contact us for further information.

Thermally Insulated Balcony Connectors

| Ancon Isotec Product Specification Structure | | | | | | |
|--|-------------|-------------------------------|----------------|-----------------------------|---------------------------|---------------------------------|
| ACTP- | MV- | 080- | 200- | 03- | SH | 10 |
| Standard Isotec Code | System Type | Standard Insulation Thickness | Slab Depth (h) | Design Capacity (see Table) | Anchorage Type (SH or SB) | Step Height (cm) (See sketches) |

Isotec Types ACTP-MV-080 SH and ACTP-MV-080 SB

| Design Capacity Type | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|--|---------|---------|---------|---------|-------|-------|-------|-------|-------|-------|-------|---------|---------|---------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Tension Bars | 4Ø8 | 6Ø8 | 6Ø8 | 8Ø8 | 8Ø8 | 10Ø8 | 6Ø10 | 6Ø12 | 10Ø10 | 8Ø12 | 12Ø10 | 10Ø12 | 10Ø12 | 12Ø12 | 12Ø12 | 12Ø12 | 12Ø12 | 14Ø12 | 14Ø12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Compression Bars | 4Ø12 | 4Ø12 | 4Ø12 | 6Ø12 | 6Ø12 | 6Ø12 | 6Ø12 | 8Ø12 | 8Ø12 | 10Ø12 | 10Ø12 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shear Bars | 4Ø6 | 4Ø6 | 6Ø6 | 4Ø6 | 6Ø6 | 4Ø8 | 6Ø8 | 4Ø8 | 6Ø8 | 4Ø8 | 6Ø8 | 4Ø8 | 6Ø8 | 8Ø8 | 4Ø8 | 6Ø8 | 8Ø8 | 6Ø8 | 8Ø8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ls (mm) | 430 | 430 | 430 | 430 | 430 | 430 | 530 | 680 | 530 | 680 | 530 | 680 | 680 | 680 | 680 | 680 | 680 | 680 | 680 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unit Length (mm) | 1000 | | | | | | | | | | 1000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design Resistance | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>SH10 / SH15</p> </div> <div style="text-align: center;"> <p>SB10 / SB15</p> </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | M_{Rd} (kNm/m) | 160 | 170 | 180 | 190 | 200 | 210 | 220 | 230 | 240 | 250 | 160 | 170-180 | 190-200 | 210-220 | 230-250 | 8.06 | 12.00 | 12.09 | 15.93 | 16.03 | 20.21 | 17.88 | 26.69 | 26.42 | 35.34 | 33.97 | 43.47 | 43.82 | 44.16 | 52.03 | 52.37 | 52.72 | 60.93 | 59.09 | 8.81 | 13.18 | 13.22 | 17.55 | 17.59 | 22.20 | 20.25 | 29.45 | 29.76 | 39.09 | 38.15 | 48.20 | 48.45 | 48.70 | 57.74 | 57.99 | 58.24 | 67.53 | 66.37 | 9.84 | 14.65 | 14.76 | 19.46 | 19.57 | 24.69 | 22.67 | 32.70 | 33.14 | 43.33 | 42.38 | 53.42 | 53.83 | 54.23 | 63.95 | 64.35 | 64.76 | 74.88 | 73.72 | 10.87 | 16.12 | 16.31 | 21.36 | 21.55 | 26.60 | 25.23 | 35.38 | 36.65 | 46.98 | 46.74 | 58.07 | 58.33 | 58.60 | 69.57 | 69.84 | 70.11 | 81.35 | 81.25 | 11.90 | 17.59 | 17.85 | 23.27 | 23.54 | 29.06 | 27.69 | 38.61 | 40.08 | 51.19 | 51.01 | 63.26 | 63.67 | 64.08 | 75.75 | 76.16 | 76.56 | 88.65 | 88.66 | 12.93 | 19.05 | 19.40 | 25.17 | 25.52 | 31.52 | 30.16 | 41.83 | 43.50 | 55.41 | 55.29 | 68.46 | 69.00 | 69.55 | 81.93 | 82.48 | 83.02 | 95.95 | 96.07 | 13.96 | 20.52 | 20.95 | 27.08 | 27.50 | 33.99 | 32.62 | 45.06 | 46.92 | 59.62 | 59.56 | 73.65 | 74.34 | 75.02 | 88.11 | 88.79 | 89.48 | 103.25 | 103.48 | 15.00 | 21.99 | 22.49 | 28.98 | 29.49 | 36.45 | 35.08 | 48.29 | 50.35 | 63.83 | 63.83 | 78.85 | 79.67 | 80.50 | 94.29 | 95.11 | 95.94 | 110.55 | 110.88 | 16.03 | 23.46 | 24.04 | 30.89 | 31.47 | 38.92 | 37.54 | 51.52 | 53.77 | 68.04 | 68.10 | 84.04 | 85.01 | 85.97 | 100.47 | 101.43 | 102.39 | 117.85 | 118.29 | 17.06 | 24.92 | 25.58 | 32.79 | 33.45 | 41.38 | 40.01 | 54.75 | 57.19 | 72.25 | 72.37 | 89.24 | 90.34 | 91.44 | 106.65 | 107.75 | 108.85 | 125.16 |
| V_{Rd} (kN/m) | 160 | 170-180 | 190-200 | 210-220 | 230-250 | 31.61 | 34.77 | 34.77 | 34.77 | 34.77 | 31.61 | 34.77 | 34.77 | 34.77 | 34.77 | 31.61 | 34.77 | 34.77 | 34.77 | 34.77 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ACTP-MV-080 Types 12 to 19 feature a continuous welded plate.
Other step dimensions available on request.

Notes: All sketches show the balcony on the left hand side and the main slab on the right.

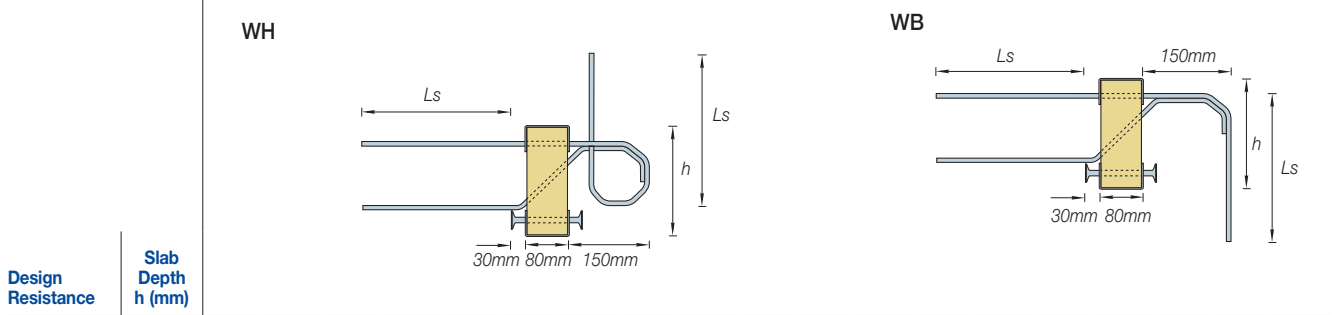
The tables use concrete grade C30/37 and 30mm cover - for lower concrete grade, please contact Ancon. The design resistances given are per unit (see unit length). The tables provide design capacities for standard 80mm thick Isotec elements. Special 120mm thick Ancon Isotec elements with enhanced thermal properties may also be designed and manufactured by Leviat upon request: please contact us for further information.

Ancon Isotec Product Referencing

| | | | | | |
|----------------------|-------------|-------------------------------|----------------|-----------------------------|--|
| ACTP- | MV- | 080- | 200- | 03- | WH |
| Standard Isotec Code | System Type | Standard Insulation Thickness | Slab Depth (h) | Design Capacity (see Table) | Anchorage Type (WH or WB see sketches) |

Isotec Types ACTP-MV-080 WH and ACTP-MV-080 WB

| Design Capacity Type | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | |
|----------------------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Tension Bars | 4Ø8 | 6Ø8 | 6Ø8 | 8Ø8 | 8Ø8 | 10Ø8 | 6Ø10 | 6Ø12 | 10Ø10 | 8Ø12 | 12Ø10 | 10Ø12 | 10Ø12 | 10Ø12 | 12Ø12 | 12Ø12 | 12Ø12 | 14Ø12 | 14Ø12 | |
| Compression Bars | 4Ø12 | 4Ø12 | 4Ø12 | 6Ø12 | 6Ø12 | 6Ø12 | 6Ø12 | 8Ø12 | 8Ø12 | 10Ø12 | 10Ø12 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | 12Ø14 | |
| Shear Bars | 4Ø6 | 4Ø6 | 6Ø6 | 4Ø6 | 6Ø6 | 4Ø8 | 6Ø8 | 4Ø8 | 6Ø8 | 4Ø8 | 6Ø8 | 4Ø8 | 6Ø8 | 8Ø8 | 4Ø8 | 6Ø8 | 8Ø8 | 6Ø8 | 8Ø8 | |
| Ls (mm) | 430 | 430 | 430 | 430 | 430 | 430 | 530 | 680 | 530 | 680 | 530 | 680 | 680 | 680 | 680 | 680 | 680 | 680 | 680 | |
| Unit Length (mm) | 1000 | | | | | | | | | | 1000 | | | | | | | | | |



| Design Resistance | Slab Depth h (mm) | | | | | | | | | | | | | | | | | | | |
|-------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| M_{Rd} (kNm/m) | 160 | 8.06 | 12.00 | 12.09 | 15.93 | 16.03 | 20.21 | 17.88 | 26.69 | 26.42 | 35.34 | 33.97 | 43.47 | 43.82 | 44.16 | 52.03 | 52.37 | 52.72 | 60.93 | 59.09 |
| | 170 | 8.81 | 13.18 | 13.22 | 17.55 | 17.59 | 22.20 | 20.25 | 29.45 | 29.76 | 39.09 | 38.15 | 48.20 | 48.45 | 48.70 | 57.74 | 57.99 | 58.24 | 67.53 | 66.37 |
| | 180 | 9.84 | 14.65 | 14.76 | 19.46 | 19.57 | 24.69 | 22.67 | 32.70 | 33.14 | 43.33 | 42.38 | 53.42 | 53.83 | 54.23 | 63.95 | 64.35 | 64.76 | 74.88 | 73.72 |
| | 190 | 10.87 | 16.12 | 16.31 | 21.36 | 21.55 | 26.60 | 25.23 | 35.38 | 36.65 | 46.98 | 46.74 | 58.07 | 58.33 | 58.60 | 69.57 | 69.84 | 70.11 | 81.35 | 81.25 |
| | 200 | 11.90 | 17.59 | 17.85 | 23.27 | 23.54 | 29.06 | 27.69 | 38.61 | 40.08 | 51.19 | 51.01 | 63.26 | 63.67 | 64.08 | 75.75 | 76.16 | 76.56 | 88.65 | 88.66 |
| | 210 | 12.93 | 19.05 | 19.40 | 25.17 | 25.52 | 31.52 | 30.16 | 41.83 | 43.50 | 55.41 | 55.29 | 68.46 | 69.00 | 69.55 | 81.93 | 82.48 | 83.02 | 95.95 | 96.07 |
| | 220 | 13.96 | 20.52 | 20.95 | 27.08 | 27.50 | 33.99 | 32.62 | 45.06 | 46.92 | 59.62 | 59.56 | 73.65 | 74.34 | 75.02 | 88.11 | 88.79 | 89.48 | 103.25 | 103.48 |
| | 230 | 15.00 | 21.99 | 22.49 | 28.98 | 29.49 | 36.45 | 35.08 | 48.29 | 50.35 | 63.83 | 63.83 | 78.85 | 79.67 | 80.50 | 94.29 | 95.11 | 95.94 | 110.55 | 110.88 |
| | 240 | 16.03 | 23.46 | 24.04 | 30.89 | 31.47 | 38.92 | 37.54 | 51.52 | 53.77 | 68.04 | 68.10 | 84.04 | 85.01 | 85.97 | 100.47 | 101.43 | 102.39 | 117.85 | 118.29 |
| | 250 | 17.06 | 24.92 | 25.58 | 32.79 | 33.45 | 41.38 | 40.01 | 54.75 | 57.19 | 72.25 | 72.37 | 89.24 | 90.34 | 91.44 | 106.65 | 107.75 | 108.85 | 125.16 | 125.70 |
| V_{Rd} (kN/m) | 160 | 31.61 | 31.61 | 47.41 | 31.61 | 47.41 | 50.14 | 75.21 | 50.14 | 75.21 | 50.14 | 75.21 | 50.14 | 75.21 | 100.28 | 50.14 | 75.21 | 100.28 | 75.21 | 100.28 |
| | 170-180 | 34.77 | 34.77 | 52.16 | 34.77 | 52.16 | 56.19 | 84.29 | 56.19 | 84.29 | 56.19 | 84.29 | 56.19 | 84.29 | 112.38 | 56.19 | 84.29 | 112.38 | 84.29 | 112.38 |
| | 190-200 | 34.77 | 34.77 | 52.16 | 34.77 | 52.16 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 123.63 | 61.81 | 92.72 | 123.63 | 92.72 | 123.63 |
| | 210-220 | 34.77 | 34.77 | 52.16 | 34.77 | 52.16 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 123.63 | 61.81 | 92.72 | 123.63 | 92.72 | 123.63 |
| | 230-250 | 34.77 | 34.77 | 52.16 | 34.77 | 52.16 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 61.81 | 92.72 | 123.63 | 61.81 | 92.72 | 123.63 | 92.72 | 123.63 |

Notes: All sketches show the balcony on the left hand side and the main slab on the right.
 The tables use concrete grade C30/37 and 30mm cover - for lower concrete grade, please contact Ancon. The design resistances given are per unit (see unit length). The tables provide design capacities for standard 80mm thick Isotec elements. Special 120mm thick Ancon Isotec elements with enhanced thermal properties may also be designed and manufactured by Leviat upon request: please contact us for further information.

Thermally Insulated Balcony Connectors

Design Considerations

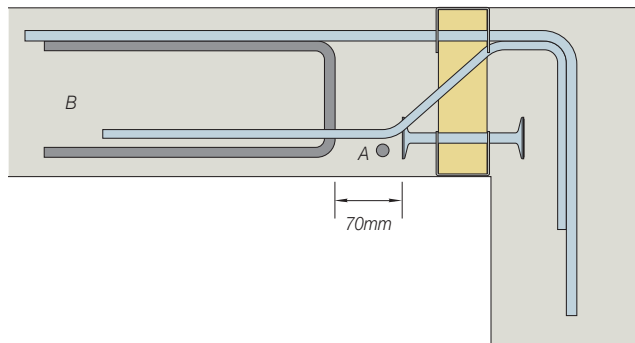
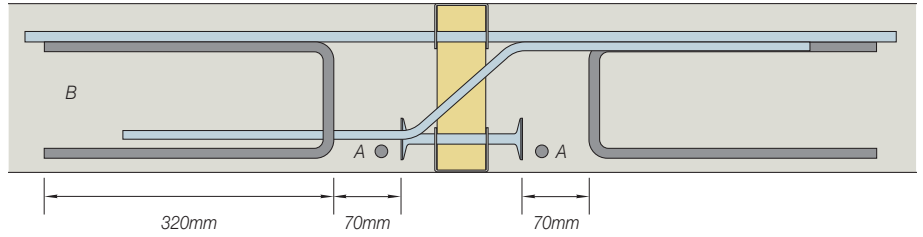
Local Reinforcement

Local reinforcement is required to guarantee that the forces are transferred between the Isotec unit and the concrete. Correct detailing in accordance with appropriate design codes and the recommendations provided here will ensure the Ancon Isotec system attains its full capacity.

Balcony Deflections

Formwork for in-situ balconies and pre-cast balconies must be given appropriate pre-camber so that, once props have been removed after the concrete has reached appropriate strength, the balcony is inclined in the correct direction and to the correct slope.

We can advise on calculated deflections upon receipt of relevant design data.



Only Local Reinforcement - Main reinforcement omitted for clarity

A = H6 Grade B500B – straight

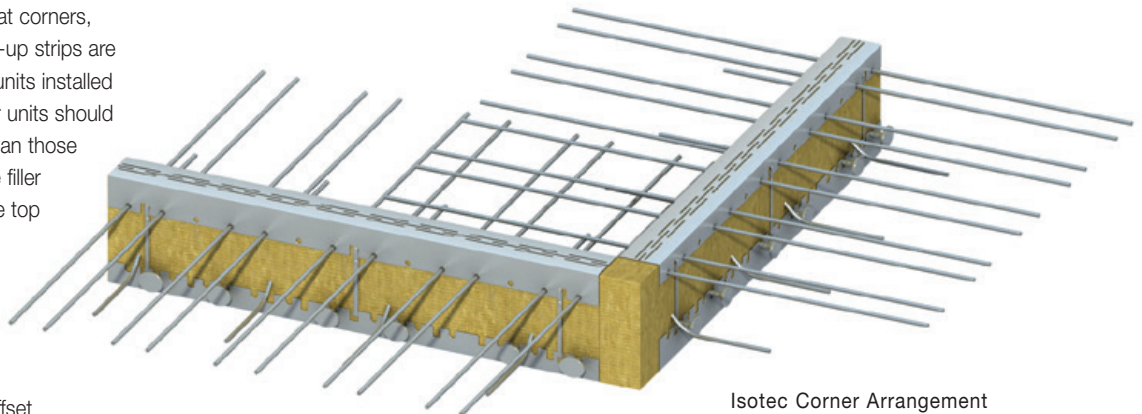
B = H8 Grade B500B, minimum length 320mm, U-bar (one for each compression stud)

- Overlapping bars must be determined by the project engineer
- **Under no circumstances should Isotec elements be modified after manufacture.** Bars should neither be bent nor cut without prior authorisation from us.

Corner Details

To avoid a reinforcement clash at corners, 20mm thick mineral wool make-up strips are typically detailed on the Isotec units installed locally at the corner. The corner units should be specified shorter in height than those used elsewhere in the slab. The filler pieces are supplied glued to the top and bottom respectively of the adjacent Isotec corner units.

Alternatively, if sufficient time is provided, special full height Isotec corner units can be manufactured that feature offset tension and shear bars to avoid clashes with adjacent units, eliminating the need for infill pieces.

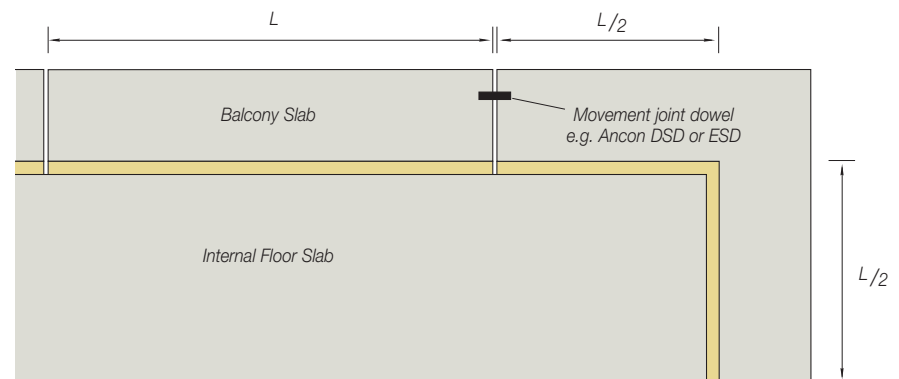


Isotec Corner Arrangement

Movement Joints

The maximum allowable uninterrupted length of balcony to be supported by Isotec units, before a movement joint is required, is given in the table in metres. At corners, the distance is half the lengths given.

| Bar Diameter (mm) | ≤10 | 12 | 14 | 16 | 20 |
|----------------------|-------|-------|-------|------|------|
| Joint Centres, L (m) | 13.00 | 11.30 | 10.10 | 9.20 | 8.00 |



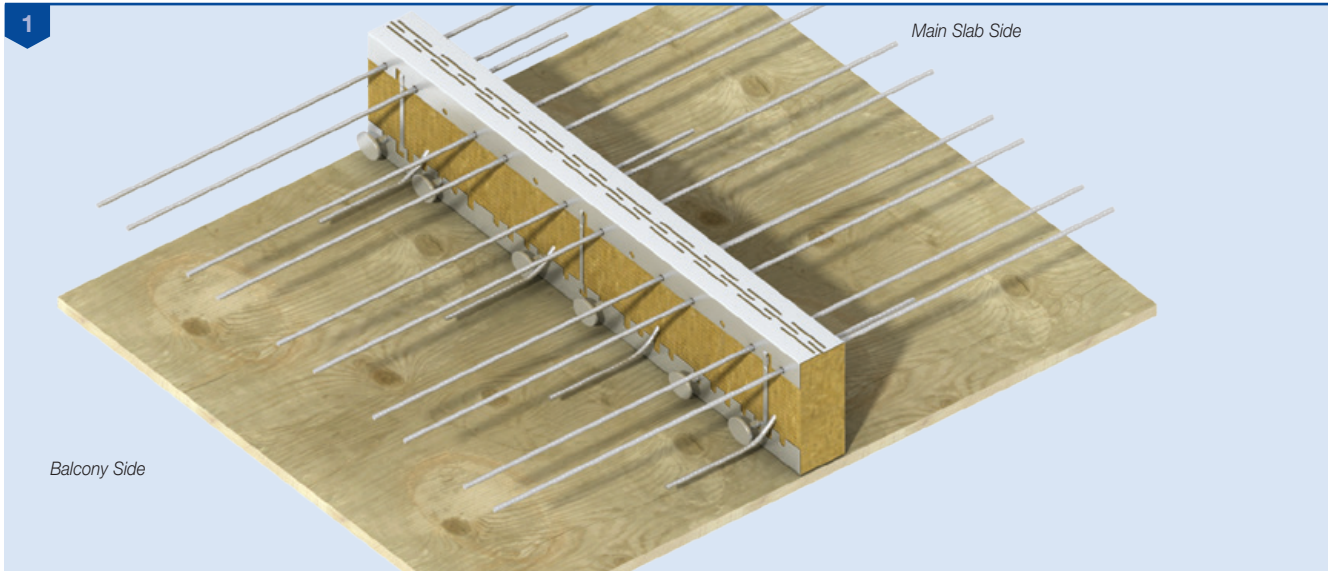
Movement Joint Centres

Installation Guidance

Prior to installation, ensure all Isotec elements have not been damaged during transit or site handling and that they correspond to the project specification.

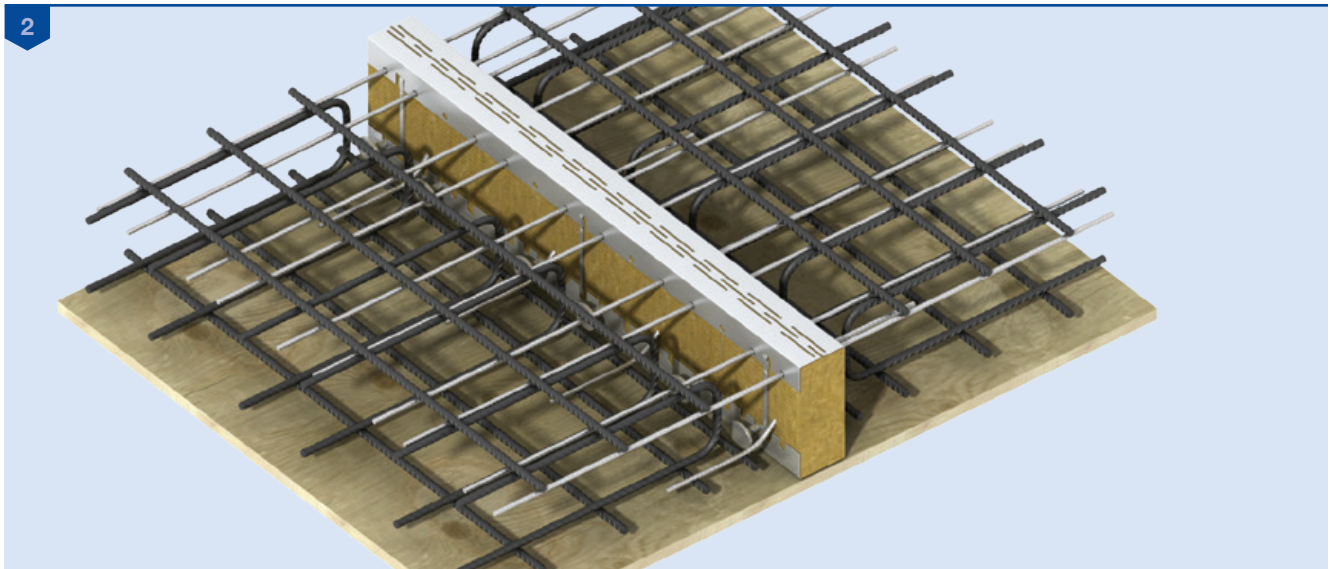
Step 1

Place the Isotec system on the formwork in line with the project drawings, ensuring all Isotec elements are positioned and orientated as indicated on the product label.



Step 2

Position all necessary local and main reinforcement. Secure each Isotec unit to the slab reinforcement. Any gaps between Isotec elements must be filled with equivalent insulating material.



Step 3

Concrete should be poured adjacent to the Isotec system and simultaneously to either side to avoid any displacement.

Precast applications

If Isotec elements are used in precast balconies, lifting systems must be positioned within the gaps between Isotec elements. Ensure the compression studs do not apply pressure on an internal structure already in position.



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