**Rondo Duo® Exposed Grid Ceiling System**

**Summary**

Rondo Duo® is a practical ceiling system which has a complete range of main sections and complementary parts so that you can adapt the modules to suit your design needs.

Expertly engineered for fast assembly on site, Cross Tees will positively lock into each other through the Main Tee with a gentle push, to create a sturdy structure for your ceiling requirements.

**Suitable for:**
- Steel Ceiling Grid Systems
- Aluminium Ceiling Grid Systems
- Drop-in Configurations
- One-way semi-concealed configurations
- Seismic Designs*
- Bulkhead designs
- Lineal diffusers

**Special Features**
- Available in pre-finished steel
- Double rows of embossed stitching on tees to increase torsional strength
- Able to be removed/reinstalled without damage
- Main tee slots every 100mm for Cross Tees gives extra layout flexibility
- Unique “Zipper” box, better protects and stores product

**In Practice**

Since the early 2000s, we’re proud to have supplied the Rondo Duo® system to countless prestigious projects around Australia and the world, including the Fiona Stanley Hospital in Perth, and RMIT Swanston University in Melbourne.

* Seismic activity varies significantly in the markets where the Rondo Duo® System may be installed and therefore Rondo’s Technical Services Department should be contacted for assistance.

**Important Note:**

Rondo recommends its products and systems are installed by a qualified tradesperson and according to the relevant codes and standards outlined on page 256 of this manual.
### Rondo Duo® Components

**Primary Sections**
- DUO 1: Main Tee: 24 x 38mm
- DUO 2: Cross Tee: 24 x 34mm
- DUO H: Cross Tee: 24 x 34mm (Heavy Duty)

**Splines**
- 371: 22mm T Spline
- 743: T Spline Yoke for DUO 1

**Wall Angles & Bulkhead Trim**
- DUO 5: Rolled Edge Wall Angle: Steel 25 x 19mm
- DUO 6: Shadowline Wall Angle: Steel 19 x 9 x 9 x 15mm
- DUO 7: Shadowline Wall Angle: Aluminium 19 x 9 x 9 x 15mm
- DUO 8: Aluminium Wall Angle: 32 x 19mm
- 321: Aluminium Bulkhead Clip

**Joiners**
- 708: Tee Bar Bulkhead Clip
- 709: Joiner: DUO 5
- 716: Joiner: DUO 6 and 7
- 717: DUO 5 Bulkhead Clip

**Suspension Clips & Brackets**
- 700: Spring adjustable clip for 5mm soft galv suspension rod
- 701: Thread adjustable clip for M6 threaded rod (with lock nut)
- 719: Hooked adjustable suspension clip
- 254: Suspension rod joiner
- 247: Suspension rod Angle Bracket
- 274: Suspension rod bracket
- 534: Suspension rod bracket: Timber – Steel
- 547: Suspension rod bracket: Concrete

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**Primary Sections**

**Splines**

**Wall Angles & Bulkhead Trim**

**Joiners**

**Suspension Clips & Brackets**

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The details shown herein are generic in nature and do not specifically consider seismic design. For Seismic compliance refer to the Rondo "Introduction to Rondo Seismic Wall and Ceiling Systems" manual.
TYPICAL APPLICATION DETAILS

TWO-WAY EXPOSED CEILING SYSTEM DETAIL

ONE-WAY LINEAR SYSTEM
**SUGGESTED RAKING CEILING DETAIL** (maximum pitch: 45°)

- Roof cladding
- Steel purlin
- Adjustable suspension rod
- Hooked adjustable suspension clip
- 274 Direct Fixing Clip
- Rondo DUO 1 Main Tee
- Suspension rod Part No 121
- 700 Suspension Clip
- 121 Suspension Rod
- 247 Direct Fixing Clip
- 545 Angle Bracket
- DUO 1 Main Tee
- DUO 5 Wall Angle
- Ceiling Tile
- 220mm min
- 300mm max
- 300mm max
- 121 Suspension Rod
- 700 Suspension Clip
- 127 Top Cross Rail
- 139 Locking Key
- 129 Furring Channel
- Building Board
- DUO 5 Wall Angle
- DUO 1 Main Tee
- Ceiling Tile
- DUO 1 Main Tee
- DUO 5 Wall Angle
- Ceiling Tile

**SQUARELINE BULKHEAD DETAIL** (Vertical Exposed Grid)

- DUO 5 Wall Angle
- Ceiling Tile
- 247 Direct Fixing Clip
- 121 Suspension Rod
- DUO 1 Main Tee
- DUO 5 Wall Angle
- Ceiling Tile
- 717 Bulkhead Clip
- 700 Suspension Clip

**SQUARELINE BULKHEAD DETAIL** (Vertical KEY-LOCK®/Steel Stud System)

- 247 Direct Fixing Clip
- 121 Suspension Rod
- DUO 1 Main Tee
- DUO 5 Wall Angle
- Ceiling Tile
- 717 Bulkhead Clip
- 700 Suspension Clip
TYPICAL APPLICATION DETAILS (continued)

- **ALTERNATIVE PERIMETER DETAIL**
- **CROSS TEE REMOVAL**
- **PARTITION MOUNTING DETAILS**
- **TILE HOLDDOWN CLIP**
- **AIR DIFFUSER DETAIL**
**INSTALLATION DETAILS**

Two-way Exposed Grid System

**STEP ONE**

The room must be checked on site to determine if it is out of square. Using the 3/4/5 method (*Figure 1*) will assist in squaring up the room before installation.

Layout ceiling grid module to datum shown on architects drawing, or give equal cut tiles at perimeter walls (refer *Figure 1*).

Work out an even margin along the sides and at both ends.

**EXAMPLE** (refer *Figure 2*):

**Main Tee**

4m divided by tile length (1.2m) = 3.3 tile modules.
4m less 3.6m (i.e. 3 full tile lengths) = 400mm.
400mm plus one tile length (1.2m) = 1.6m.
Divide 1.6m by 2 = 800mm margin along each side.

**Cross Tee**:

5m divided by tile width (600mm) = 8.3 tile modules.
5m less 4.8m (i.e. 8 full tile widths) = 200mm.
200mm plus one full tile width (600mm) = 800mm.
Divide 800mm by 2 = 400mm margin at each side

**STEP TWO**

Mark each wall to the correct height of the ceiling.

Cut the Perimeter wall angle trim to length, and fix to wall with suitable fasteners at 600mm maximum centres. (*Refer Figure 3.*)

The Wall Angle should be mitred at corner intersections and supported at all joints by appropriate joiners. This will provide a more secure and aesthetic appearance. (*Refer Figure 4.*)

**NOTE:**

The perimeter wall angle fixings shall be made to the framing members only, not to the wall linings.
**STEP THREE**
Install the Main Tee suspension hanger brackets to the supporting structure to match the spacing of the Main Tees and such that the Main Tee span does not exceed 1200mm.

**NOTE:**
Ensure the hanger points are set out so that hangers adjacent to the perimeter walls are no more than 300mm from the wall unless otherwise specified.

**STEP FOUR**
Assemble the suspension clips on suspension rods cut to pre-determined lengths. For the 274 or 247 suspension brackets, bend a hook on one end to 30° as shown (refer Figure 5). Install all rods or Main Tees into the suspension brackets previously installed, as appropriate (refer Figure 6). If using tie-wire, ensure wire has at least three tight turns (refer Figure 5).

**STEP FIVE**
Cut Main Tee to length so that the first pre-punched Cross Tee slot is on module as determined in Step One.
STEP SIX
Install the Main Tee into the Suspension Clips (refer Figures 5 & 7). The self locking joiners are then pushed together to lock the Main Tees, leaving a hairline connection as detailed (refer Figure 9). The cut end is held in position using the stabiliser clips. (Refer Figure 8. If using tie–wire, refer Step Four and Figure 5.)
NOTE:
Stagger the Main Tee joints throughout the ceiling. Keep suspension points within 5° of vertical when using suspension clips 700 & 701 (refer Figure 8).

STEP SEVEN
With a gentle push, install the Cross Tees at the module centres through pre-punched slots in the Main Tees. Ensure positive locking of both Cross Tee end tags into each other (refer Figure 9).

STEP EIGHT
Level and align the ceiling grid prior to installing the ceiling tiles. The suspension points can be adjusted to either a string line or laser.

STEP NINE
In large areas to assist in stabilising the grid system, Rondo 705 or 706 Stabiliser Clip should be attached to the perimeter trim at every second or third Main and Cross Tee. The clips are to be fixed in place with pop rivets or wafer-head self-drilling screws.

<images>
INSTALLATION DETAILS (continued)
Two-way Exposed Grid System (continued)

STEP TEN
The grid should now be ready for the light fittings to be installed and supported on the Main Tee only. Air conditioning grilles and ceiling tiles can also be installed. Additional suspension points must be used where specified to carry light fittings or ceiling attachments. (Refer Figure 11 and maximum allowable loads on Page 54.)

600 X 600 GRID MODULES
Install the ceiling grid as described in the previous installation details for a 1200 x 600mm grid module. Space the Main Tee at 1200mm centres, and 1200mm long Cross Tees at 600mm centres, with additional 600mm long Cross Tee locked in between the 1200mm long Cross Tee to form a 600 x 600mm grid. (Refer Grid Type D on Page 53.)

SPANS GREATER THAN 1200mm
If the span to support the Main Tee is more than 1200mm, the suspension may be inclined using either tie wire or the 719 hooked clips. The angle of suspension should not exceed 15° without further checking by Rondo (refer Figure 12). NOTE: For alternative grid modules, refer to the Grid Selection Guide on page 54.
Exposed Grid Bulkhead System

The Rondo Square Line Bulkhead System allows for easy, economical and true bulkhead corner finishes to be achieved by using concealed support clips and fixings.

STEP ONE
Prepare the ends of the horizontal framing members as shown (refer Figure 13).

STEP TWO
Position Support Clips 708 on the ends of the Main Tees ensuring that the heads are central to the head cut-outs for the vertical members (refer Figure 14). Drill through the clip into the head and pop rivet.

STEP THREE
Introduce the Bulkhead Trim DUO 5 to the support clips (refer Figure 15).

STEP FOUR
Join Bulkhead Trim end to end using Joiner 709 to give a flush finish. (refer Figure 16).

STEP FIVE
Prepare the ends of the vertical members as shown, and introduce into the profiled cut-outs in the Support Clips (refer Figures 17 & 18).

13 15–20mm max
   22–25mm max

14 Pop rivet to head

15 Support Clips

16 Joiner 709

17 15–19mm max
   21–25mm max

18 Vertical Members

BULKHEAD JOINER DETAILS

CEILINGS: DUO
STEP ONE
Install the metal framework using Rondo Steel Studs and Tracks and braced to engineer’s specifications.

STEP TWO
Attach Support Clips 717 to the framework so as to line up with the plane of the exposed grid (refer Figure 19).

STEP THREE
Introduce the DUO 5 Bulkhead Trim to the Support Clips (refer Figure 20).

STEP FOUR
Join the Bulkhead Trim end to end using Joiners 709 to give a flush finish. Join the Bulkhead Trim at the corners using Internal Corner Joiner 711 and External Corner Joiner 710 (refer Figure 16 on Page 49).

STEP FIVE
Introduce the vertical building board and screw-fix to the framework (refer Figure 21).

STEP SIX
Assemble and install the exposed grid, with the ends of the framing members prepared to fit into the Support Clips as shown. Provide suspension to the Main Tees within 300mm of the bulkhead framing (refer Figure 22).

STEP SEVEN
Install ceiling panels (refer Figure 23).
PRODUCT DATA SPECIFICATIONS

MATERIAL SPECIFICATIONS

The Rondo DUO 2 Cross Tee base section is double-web cold rollformed from hot-dipped, zinc-coated galvanised steel strip. Rondo DUO 1 and DUO H sections are hot-dipped steel with a zinc or zinc-aluminium alloy coating.

The exposed capping face is cold rollformed onto the base section from hot-dipped, zinc-coated galvanised steel strip with a factory-applied polyester paint finish.

MASS

MAIN TEE
24 x 38mm DUO 1: 0.30kg per lineal metre.
CROSS TEE
24 x 34mm DUO 2: 0.24kg per lineal metre.
24 x 34mm DUO H: 0.30kg per lineal metre.

ADDITIONAL LOADS

The suspension system is designed to carry the weight of the ceiling only. Additional loads are not to be placed upon or carried by the suspension system without prior reference to Rondo Technical Services.

NOTE:
See page 54 for the maximum load tables for each module design.

**TABLE 1: SECTION DIMENSIONS**

<table>
<thead>
<tr>
<th>RONDO PART NO</th>
<th>AREA mm²</th>
<th>T (BMT) mm</th>
<th>Xc mm</th>
<th>Yc mm</th>
<th>SELF-WEIGHT kg/m</th>
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</thead>
<tbody>
<tr>
<td>DUO 1 24mm MAIN TEE</td>
<td>31.7</td>
<td>0.30</td>
<td>11.8</td>
<td>21.4</td>
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<td>DUO 2 24mm CROSS TEE</td>
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<td>27.6</td>
<td>0.30</td>
<td>12.0</td>
<td>14.48</td>
<td>0.30</td>
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PRODUCT DATA SPECIFICATIONS  (continued)

Colour Matching

If wishing to colour match light fittings or air registers etc to the Rondo DUO® Exposed Grid Ceiling System, we recommend that items be powder coated using Interpon MA 289 Cool White powder.

As powder coating compounds can vary from batch to batch, Rondo is not responsible for the ultimate colour match and recommends that a sample piece of Rondo DUO® Exposed Grid Ceiling System from the project be provided to the powder coater to assist his colour matching process.

This is particularly important as there can be slight variations in the colour of batches of the pre-painted capping Rondo rolls its grid components, including its colour matched perimeter trims.

It should further be recognised that there is often a difference in colour rendition when applying paint to different base materials.

IMPORTANT THINGS TO KNOW:

• When cutting ceiling grid to finish at the perimeter trim, it is recommended that a gap of no more than 5mm between the inside of the trim and the end of the grid component is allowed for movement, whether or not stabiliser clips are being used.

• The Rondo DUO 8 long leg aluminium perimeter angle trim should be used when finishing a ceiling to a concrete “Tilt-Up” wall construction.
  The trim should be fixed through the 19mm leg so that the grid is resting on the 32mm leg, and therefore provides a wider landing surface to counter the effects of thermal movement. The Rondo 705 stabiliser clip can be used with this trim no matter which way around it is fixed.

• Curved Walls & Columns: Rondo is able to provide radiussed aluminium shadowline and angle wall trims as well as column trims.
  There are limitations to the radii achievable and reference should be made to your Rondo Technical representative or Authorised Rondo Distributor for further information if uncertain.

• Rondo manufacture and supply all components ready for use. There should be no requirement to manipulate the products unless specifically designed otherwise. Should you find the components do not readily assemble as detailed, please contact your local Rondo representative before proceeding.
STANDARD GRIDS

### MAIN TEE

<table>
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<tr>
<th>REF</th>
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<th>LENGTH</th>
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<tr>
<td>1</td>
<td>DUO 1</td>
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### CROSS TEE

<table>
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<th>LENGTH</th>
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<tbody>
<tr>
<td>2</td>
<td>DUO 2</td>
<td>1200</td>
</tr>
<tr>
<td>3</td>
<td>DUO 2</td>
<td>600</td>
</tr>
<tr>
<td>4</td>
<td>DUO H</td>
<td>1350</td>
</tr>
<tr>
<td>5</td>
<td>DUO H</td>
<td>1200</td>
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### STEEL WALL ANGLE

<table>
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<th>PART NO</th>
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<tbody>
<tr>
<td>DUO 5</td>
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### STEEL SHADOWLINE

<table>
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<th>PART NO</th>
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<td>DUO 6</td>
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### ALUMINIUM SHADOWLINE

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<td>DUO 7</td>
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### ALUMINIUM WALL ANGLE

<table>
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<th>PART NO</th>
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<tbody>
<tr>
<td>DUO 8</td>
<td>3600</td>
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**NOTE:**
All light fittings are to be supported on Main Tee and extra hangers fitted where required. Main Tee suspension is 1200mm along its length. Refer to Rondo for further information regarding suspension at other centres.

**KEY**
- Indicates Main tee
- Indicates alternative: either 2 or 5
## TABLE 3: TEE SPACING/MAX. ALLOWABLE LOADS

<table>
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<tr>
<th>SYSTEM</th>
<th>FACE SIZE mm</th>
<th>SPACING OF M/TS mm</th>
<th>SPACING OF X/TS mm</th>
<th>ALLOWABLE LOAD kg/m²</th>
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<tr>
<td>A</td>
<td>DUO 1–H</td>
<td>24</td>
<td>1200</td>
<td>600</td>
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<tr>
<td></td>
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<td>B</td>
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<td>1200</td>
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<tr>
<td>J</td>
<td>DUO 1–2</td>
<td>24</td>
<td>600</td>
<td>600</td>
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</table>

**NOTE:**
Allowable loads are based on suspension points at 1200 centres along the Main Tee.
All light fittings are to be supported on Main Tees with additional hangers fitted, as required.
All maximum allowable load values stated assume the Main Tees are continuously spanned over three (3) or more suspension points.
**IMPORTANT FIXING INFORMATION**

Suspending Ceilings from Purlins

Rondo does not produce a suspension clip for attachment to the lip of steel purlins (‘C’ or ‘Z’ purlins, etc.) for the following reasons:

**AS/NZS 2785:2000 Suspended Ceilings – Design and Installation details the following in respect to this issue:**

- Section 4 Installation – Part 4.4: “In the case of purlins, the top fixing shall be made to the web of the purlin unless specifically designed otherwise”

- APPENDIX G Fixing (Informative): G2 Top Fixing,
  G2.1 Purlin Fixings:
  “Purlin fixings should be as follows:
  A) Connections should be made to the web of the purlin, unless specifically designed otherwise
  B) Where flange connections are necessary, they should be made as close as possible to the web of the purlin
  C) Purlin manufacturers do not recommend attaching the top fixing to the lip of the purlin
  D) Fixings should be selected and installed in accordance with the manufacturers specifications.”