KNAUF

STRATOPANEL® GYPSUM BOARD MANUAL

Acoustical Ceiling Systems

Build on us.

Content

STRATOPANEL

Introduction

Stratopanel perforated acoustic plasterboard provides both a decorative surface and significant sound absorption, making it suitable for commercial environments like educational institutions, hospitals, retail spaces, offices, conference halls, and hospitality venues.

It offers an ideal solution for noise reduction and comes in various stylish designs, allowing for creative architectural expression. Balancing functionality with aesthetics, Stratopanel empowers architects to design flexible and cohesive monolithic interiors with confidence.

Specifically applicable to ceilings, the Stratopanel acoustic plasterboard system facilitates rapid installation, making it well-suited for both new constructions and renovations with tight schedules.

Features and Benefits

- Monolithic, seamless or express joint look
- No visible joints after finishing UFF edge profile with Uniflott Jointing Compound
- Fast installation
- Various perforation patterns for architectural design flexibility
- Acoustic performance up to NRC 0.90
- Repaintable without the loss of acoustic performance
- Demountable/reusable*

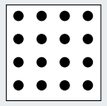
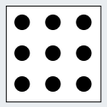
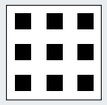
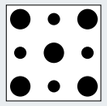
ARCHITECTS DECLARE Product Aware

* Stratopanel Perforated Acoustic Board is only demountable or reusable when installed using the correct screw-fixing method, with Cleaneo Caps and without setting any of the joints. Please consult TecAssist or your Knauf representative to ensure compliance with the recommended installation guidelines.

GENERAL INFORMATION

Stratopanel Product Range

Table 1: Standard Perforation

Knauf Item Code	Product Name	Perforation	Open Area	Thickness (mm)	Width (mm)	Length (mm)	Nominal Weight (kg/m²)
00636388	Circular R 8/18 R		15.5%	12.5	1188	1998	8.2
00636393	Circular R 12/25 R		18.1%	12.5	1200	2000	7.9
00636394	Square 12/25 Q		23.0%	12.5	1200	2000	7.4
00636391	Alternating Circular 12/20/66 R		19.6%	12.5	1188	1980	7.7
00636389	Random Plus 8/15/20 R		9.9%	12.5	1200	2000	8.6
00636920	Random Rectangular RE		13.6%	12.5	1199	1999	8.4

GENERAL INFORMATION CONT.

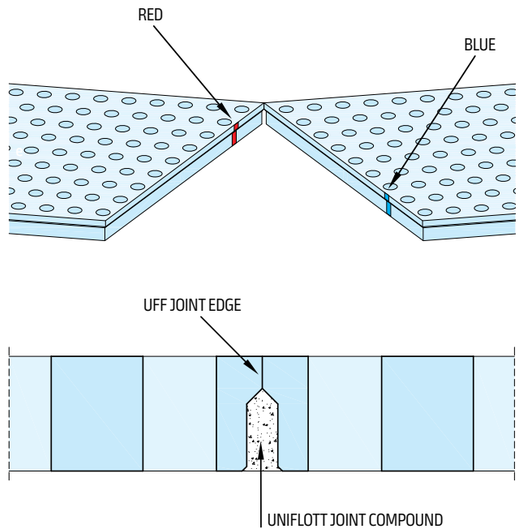
Edge Profile

UFF Edge

Stratopanel standard perforation range comes with UFF edge profile. The unique edge profile ensures that panels are installed straight, in alignment and the continuous perforations patterns are in perfect alignment. The UFF edge profile and Uniflott Joint Compounds when professionally installed by contractors form a tapeless joint that appears seamless.

- All four edges are pre-primed
- UFF edges have red and blue markings to help with Stratopanel alignment during installation
- Cut sheets can be rotated 180° to minimise wastage at perimeters (dependent on pattern)
- Easy to install
- Seamless joint look with Uniflott Joint Compound
- Express joint look achieved by not filling UFF joint

Figure 2: UFF Joint Edge Details



Access Panels

Stratopanel access panels are designed specifically for Stratopanel ceiling linings, with a range of patterns and sizes matched to the Stratopanel perforations to maintain a seamless finish over access points in the ceiling system. Refer to installation details for Stratopanel access panels and Rondo steel framing details.

600 x 600 Stratopanel access panels are stocked for the standard perforation patterns. Other sizes and patterns are available to order.

Table 2: Access Panel Sizing

Access Panel	Suitable for Perforation Pattern	Panel Size*	Knauf Item Code
Universal Access Panel	Blank Panel	600 x 600	00154805
Circular R	8/18 R	613 x 613	00173897
	12/25 R	601 x 601	00173960
Square	12/25 Q	601 x 601	00173976

* Access panel size in mm (Stratopanel opening = Access panel screen + 4 mm).

GENERAL INFORMATION CONT.

Fire Hazard Properties

Stratopanel has been tested to achieve Group 1 linings in accordance with NCC Specification C2D11 Fire Hazardous Properties requirements for Class 2-9 buildings. Table below shows permitted application of Stratopanel. Reference report FH14377 available upon request.

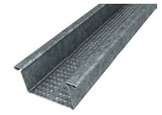
Table 3: Fire Hazard Properties

Class of building	Fire Isolated Exits and Control Rooms	Public Corridors	Specific Areas	Other Areas
Class 2 or 3, Unsprinklered. Excluding accommodation for the aged, people with disabilities, and children.	√	√	√	√
Class 2 or 3, Sprinklered. Excluding accommodation for the aged, people with disabilities, and children.	√	√	√	√
Class 3 or 9a, Unsprinklered. Accommodation for the aged, people with a disability, children and health-care buildings.	√	√	√	√
Class 3 or 9a, Sprinklered. Accommodation for the aged, people with a disability, children and health-care buildings.	√	√	√	√
Class 5, 6, 7, 8 or 9b schools, Unsprinklered.	√	√	√	√
Class 5, 6, 7, 8 or 9b schools, Sprinklered.	√	√	√	√
Class 9b other than schools, Unsprinklered.	√	√	√	√
Class 9b other than schools, Sprinklered.	√	√	√	√
Class 9c, Sprinklered.	√	√	√	√

MATERIALS

Materials used in the construction of Knauf Stratopanel systems are listed in the following table:

Table 4: Stratopanel Materials

Knauf Item Code	Item Description		Product Image
00253630	Uniflott 5 kg	**Uniflott Joint Compound** Uniflott is a jointing compound used to deliver a strong, seamless finish. Uniflott must be used for the installation of Stratopanel. All site cuts should be primed with PVA based primer prior to application of Uniflott. As an approximate guide a 5 kg bag will cover 50 m^2 of installed Stratopanel (UFF Edge).	
00248099	Cleaneo-Cap Round 8 mm	**Cap Screws** Cap Screws (refer to brochure for seismic application limitations) Screw and cap for easy fixing of 8/18 R, 12/25 R & 12/25 Q sheet patterns only. Cap Screws remove the need for setting screw heads, as screw fixings are hidden in the perforation's holes improving the appearance of the final finish. Allow approximately 32 caps per sheet.	
00248103	Cleaneo-Cap Round 12 mm		
00525502	Cleaneo-Cap Square 12 mm		
0073961	Jet Spatula with Raised Edge	**Jet Spatula with Raised Edge** Very useful tool for 'chipping' off excess filler from joints once Uniflott hardens. This helps to reduce damage to perforations.	
0073962	Jet Trowel with Punch	**Jet Trowel with Punch** Trowel which can be used to easily patch screw heads in Stratopanel with finishing compound, providing a neat finish.	
00832942	Standard Screws	**Standard Screws** 6 – 18 x 25 mm type screws are required for Stratopanel installation.	
00817185	SHEETROCK Total Lite 17.5 kg	**Knauf Finishing Compounds** Knauf Finishing compounds including SHEETROCK Total Lite, FinalCote and LiteFinish should be applied as a topping compound over Uniflott to finish screw heads and UFF joints. When sanding, care should be taken not to damage the perforation pattern edges.	
00747833	FinalCote 20 kg		
00747841	FinalCote 4.8 kg		
00818566	LiteFinish 18 kg		
00747823	BaseCote 45 10 kg	**Knauf Jointing Compound** Knauf BaseCote can be used to fill perforations at solid look borders.	
00747820	BaseCote 45 20 kg		
00747821	BaseCote 60 20 kg		
00747822	BaseCote 90 20 kg		
00795248	50 mm Knauf Insulation Glasswool 11 kg/m^3 Density 450 mm	**Knauf Insulation Glasswool Ceiling Batts** Knauf glasswool insulation contains up to 80% recycled content and is manufactured using a unique plant-based binder – ECOSE® Technology, which is made from natural raw materials that are rapidly renewable, and is 70% less carbon intensive to manufacture than traditional binders.	
00795255	50 mm Knauf Insulation Glasswool 14 kg/m^3 Density 450 mm		
00820171	605 Furring Channel 28 mm x 64 mm x 4800 mm	**Rondo Wide Concealed Ceiling System Components** Rondo Wide Furring Channel PN. 605 for all Stratopanel short edges.	
00820172	605 Furring Channel 28 mm x 64 mm x 6000 mm		

Notes *Substitution of products may affect Stratopanel system design, application and performance.*

DESIGN CONSIDERATIONS

General Acoustics

Stratopanel ceiling systems have been designed to reduce reverberant noise in internal spaces. The acoustic performance of the space can be fine tuned by the choice of Stratopanel perforation patterns, adjusting depth of ceiling cavity and cavity insulation. This should be done in conjunction with an acoustic consultant to ensure the design intent and performance requirements can be satisfied.

Knauf Stratopanel systems have been extensively tested to achieve a NRC value of up to 0.90. Refer to product performance section for information.

Reverberation Time and Acoustic Absorption

The "acoustics" of a room generally refers to the reverberation time in a space which can range from "very live" through to "dead". A live space is very reverberant and can be considered "echoey" or loud, and speech intelligibility is generally poor but speech privacy is high. A very "dead" space is not reverberant and is considered "quiet". The speech intelligibility is high in these rooms, but speech privacy is low.

The measure of how "live" or "dead" a space is, is the reverberation time, RT_{60}, which is defined as the time in seconds that it takes for a steady noise to drop by 60 dB once the sound source is turned off. The longer the RT_{60}, the more live or reverberant the space. Typically, reverberation times are in the range from 0.3 seconds to 2-3 seconds. Rooms for music generally require longer reverberation times than rooms for speech.

Reverberation times can only really be measured in fully enclosed rooms, rooms that open to other areas allow sound to leave and re-enter the room in which reduces the ability to measure a meaningful RT_{60}. The reverberation time is usually measured across a range of frequencies, typically from 100 Hz to 5 kHz, and will vary across the frequency range.

There is not a single "good" reverberation time, as this depends on the purpose or use of a space, whether speech privacy or speech intelligibility is important, or whether the room will be used for music or speech, or both.

Australian Standard AS/NZS 2107:2016 *"Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors",* provides guidance on the appropriate reverberation times for various rooms and uses in Public, Educational, Office and other buildings. The guidance is typically provided as a range (eg 0.4-0.6 seconds, being an arithmetic average of the RT_{60} values at 500 Hz and 1 kHz).

The reverberation time in a room can be controlled by using absorptive materials within the space which reduces the acoustic reflections in the room and so reduces the RT_{60}.

The absorption characteristics of a material will vary as a function of frequency, being higher at some frequencies and lower at others. Specifying absorptive material with the appropriate absorption at the correct frequencies, and in the correct surface area, will result in the desired reverberation time being achieved in the space.

Acoustic Absorption Parameters

The acoustic absorption of a material is measured in a Reverberation Chamber, in accordance with Australian Standard AS ISO 354:2006 *"Acoustics - Measurement of Sound Absorption in a Reverberation Room".* The measurements are made in ⅓ octave bands and the acoustic absorption of the material is calculated on the effect the material has on the reverberation time. That is, the reverberation time is measured in the room both with and without the absorptive material.

The absorption coefficient is calculated based on the difference in the reverberation times and the area of the sample.

The absorption coefficients are calculated at each ⅓ octave band and reported to 2 decimal places from 0.00 (totally reflective) to 1.00 (completely absorptive), and usually presented in a graphical format.

Although very useful to acoustic consultants, graphs showing the absorption coefficients of different materials is very difficult to compare. For this reason, a number of single value descriptors have been developed to compare the absorptive characteristics of different materials.

The mounting of the acoustic material also affects the acoustic absorption characteristics of the system and so most absorptive products, especially ceilings, note the mounting conditions. In most cases, the E system is used where, for example, the E-100 mounting refers to the overall depth of the system being 100 mm. So a 20 mm thick ceiling will have an 80 mm cavity behind it to a solid backing (eg concrete soffit). The most common test mountings are E-100, E-200 and E-400.

The Stratopanel systems have been tested in the CSIRO Acoustic Laboratories in Melbourne. The acoustic absorption descriptors (NRC, SAA, α_w and Sound Absorption Class) have been calculated in accordance with the relevant standard. The individual test reports are available on request.

DESIGN CONSIDERATIONS CONT.

NRC – Noise Reduction Coefficient. This is a term that was developed in the US under their ASTM standards, but is no longer in use. Unfortunately, it is still commonly referenced and specified in Australia, although it was never part of the Australian Standard. The NRC is calculated by arithmetically averaging the ⅓ octave absorption coefficients at 250 Hz, 500 Hz, 1 kHz and 2 kHz, to determine a single value NRC number.

SAA - Sound Absorption Average. This term has superseded NRC in the US, but is still not referenced in any Australian standard. It is calculated by arithmetically averaging the ⅓ octave absorption coefficients at each of the frequencies from 200 Hz to 2.5 kHz, inclusive. The SAA have a wider frequency range and more data points to provide a more representative value than the NRC.

α_w - Weighted Sound Absorption Index. The method of calculating the αW is detailed in Australian Standard AS ISO 11654:2002 "Acoustics - Rating of Sound Absorption - Materials and Systems". αW is calculated based on the Practical Absorption Coefficients at each octave band from 250 Hz to 4 kHz inclusive. The Practical Absorption Coefficient is calculated from the arithmetic average of the ⅓ octave acoustic absorption coefficients (rounded to the nearest 0.05). The Practical Absorption coefficients are then plotted against a Reference Curve, as described in the standard, and the value at 500 Hz is determined to be the α_w of the absorptive material.

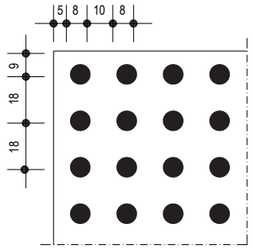
α_w can also indicate where the absorptive coefficient of the material significantly exceeds the acoustic performance of the Reference Curve (by 0.25 or more) at either Low frequencies (250 Hz), Mid frequencies (500 Hz and/or 1 kHz) or High frequencies (2 kHz and/or 4 kHz). For example, an α_w of 0.65(L) indicates good acoustic absorption overall and significantly higher performance compared to the Reference Curve at 250 Hz.

Sound Absorption Class. This parameter is also defined in AS ISO 11654:2002 (Annex B) and classifies the acoustic absorption of a material based on the value of α_w, from A (high values of α_w) through B, C, D and E, with α_w values of 0.00, 0.05 and 0.10 falling under "Not Classified".

DESIGN CONSIDERATIONS CONT.

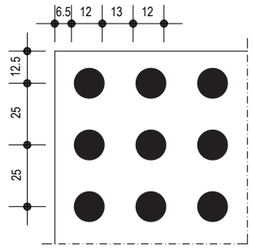
Acoustic Performance – Standard Perforation

Table 5: Circular 8/18 R



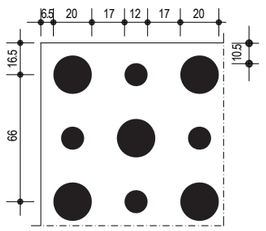
Acoustic Data							Product Description	
Overall Cavity Depth (mm)	Insulation	α_w	Class	SAA	NRC	CSIRO Acoustic Test Report No.	Thickness (mm)	12.5
							Length (mm)	1998
							Width (mm)	1188
200	Nil	0.70	C	0.70	0.70	AC356-01-2	Weight (kg m²)	8.2
	KI 50G11	0.75(L)	C	0.78	0.80	AC356-02-2		
400	Nil	0.70(L)	C	0.72	0.70	AC356-04-2	Open Area (%)	15.5
	KI 50G11	0.80	B	0.78	0.80	AC356-03-2		

Table 6: Circular 12/25 R



Acoustic Data							Product Description	
Overall Cavity Depth (mm)	Insulation	α_w	Class	SAA	NRC	CSIRO Acoustic Test Report No.	Thickness (mm)	12.5
							Length (mm)	2000
							Width (mm)	1200
200	Nil	0.70(L)	C	0.73	0.75	AC359-09-1	Weight (kg m²)	7.9
	KI 50G11	0.80	B	0.81	0.80	AC359-16-1		
400	Nil	0.70(L)	C	0.73	0.70	AC359-08-1	Open Area (%)	18.1
	KI 50G11	0.80	B	0.81	0.80	AC359-01-1		

Table 7: Alternating Circular 12/20/66 R



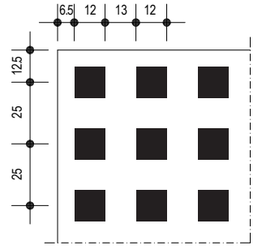
Acoustic Data							Product Description	
Overall Cavity Depth (mm)	Insulation	α_w	Class	SAA	NRC	CSIRO Acoustic Test Report No.	Thickness (mm)	12.5
							Length (mm)	1980
							Width (mm)	1188
200	Nil	0.65(LM)	C	0.73	0.75	AC359-12-1	Weight (kg m²)	7.7
	KI 50G11	0.75(L)	C	0.83	0.85	AC359-13-1		
400	Nil	0.75(L)	C	0.72	0.70	AC359-05-1	Open Area (%)	19.6
	KI 50G11	0.80(L)	B	0.82	0.80	AC359-04-1		

Notes

- *Perforation dimensions shown in millimetres.*
- *All acoustic performance detailed is based on actual test values as captured via corresponding CSIRO acoustic test reports.*
- *KI 50G11 refers to Knauf Insulation, 50 mm, glasswool, 11 kg/m³ density.*

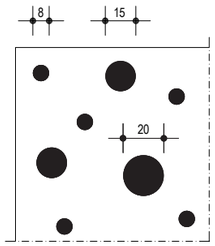
DESIGN CONSIDERATIONS CONT.

Table 8: Square 12/25 Q



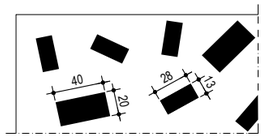
Acoustic Data							Product Description	
Overall Cavity Depth (mm)	Insulation	α_w	Class	SAA	NRC	CSIRO Acoustic Test Report No.	Thickness (mm)	12.5
							Length (mm)	2000
							Width (mm)	1200
200	Nil	0.70(L)	C	0.77	0.75	AC359-11-1	Weight (kg m²)	7.4
	KI 50G11	0.90(L)	A	0.92	0.90	AC359-14-1		
400	Nil	0.75(L)	C	0.75	0.75	AC359-06-1	Open Area (%)	23.0
	KI 50G11	0.90	A	0.90	0.90	AC359-03-1		

Table 9: Random Plus 8/15/20 R



Acoustic Data							Product Description	
Overall Cavity Depth (mm)	Insulation	α_w	Class	SAA	NRC	CSIRO Acoustic Test Report No.	Thickness (mm)	12.5
							Length (mm)	2000
							Width (mm)	1200
200	Nil	0.50(L)	D	0.57	0.60	AC359-10-1	Weight (kg m²)	8.6
	KI 50G11	0.55(L)	D	0.60	0.60	AC359-15-1		
400	Nil	0.55(L)	D	0.57	0.55	AC359-07-1	Open Area (%)	9.9
	KI 50G11	0.55(L)	D	0.60	0.60	AC359-02-1		

Table 10: Random Rectangular RE



Acoustic Data							Product Description	
Overall Cavity Depth (mm)	Insulation	α_w	Class	SAA	NRC	CSIRO Acoustic Test Report No.	Thickness (mm)	12.5
							Length (mm)	1999
							Width (mm)	1199
200	Nil	0.50(LM)	D	0.64	0.65	AC359-20-1	Weight (kg m²)	8.4
	KI 50G11	0.60(L)	C	0.70	0.70	AC359-19-1		
400	Nil	0.55(L)	D	0.65	0.60	AC359-17-1	Open Area (%)	13.6
	KI 50G11	0.65(L)	C	0.70	0.70	AC359-18-1		

DESIGN CONSIDERATIONS CONT.

Stratopanel Ceiling

Stratopanel must be designed for internal spaces only and is non trafficable. Ceiling fixtures shall be secured to the support framing system to manufacturer's details. An allowance of 2.5 kg/m^2 is prescribed to support thermal or acoustic insulation loads. Incidental loads such as small downlights etc can be supported by the Stratopanel ceiling, refer to Knauf for recommendations.

Knauf recommends that Stratopanel ceilings are designed with a furring channel/clip system or suspended ceiling system. Direct fix to super structure is not recommended and designers must consider impact to floor and ceiling levels when designing a Stratopanel ceiling.

Knauf recommends screw cap fixing system with express joint details for Stratopanel. Screw caps come in 8 mm Round, 12 mm Round and 12 mm Square sizes which are suited to fit 8/18 R, 12/25 R & 12/25 Q Stratopanel patterns only.

Notes *Screw caps have low shear capacity and have limited seismic applications. It is important to inform Rondo of the preferred fixing method when submitting a design request for Stratopanel and Keylock systems to be used in seismic applications.*

A number of perimeter details such as shadowline, casing bead or wall angles are provided in the Installation Details to give designers flexibility. It is recommended that Stratopanel is not rigidly fixed to the perimeter.

To view the full range of Stratopanel installation details, scan the QR code below.

The standard perforation range creates a "monolithic" look ceiling with UFF (notched) edge profile and compound jointing system. Option to design the Stratopanel ceilings with express joints can be achieved by not filling joints with compound.

Expansive ceilings, generally require access panels for service and maintenance. Stratopanel provides dedicated access panels to maintain the continuous and monolithic appearance. Refer to Materials section for details on page 11.

Structural

Framing

Stratopanel is recommended for internal space applications only, and as such, along with the supporting framing system, needs to be designed for internal loads as defined in relevant Australian Standards and NCC. It is recommended that Stratopanel is installed to furring channel and clip system or a suspended ceiling system. Direct fix to purlins, trusses or flooring systems is not recommended.

Knauf advises the use of steel components manufactured by Rondo Building Services Pty Ltd in all Stratopanel systems. Refer to Rondo for design and details. If other steel components are to be used, it is the responsibility of the steel component manufacture to substantiate equivalent or better performance than the recommended Rondo component.

Fasteners to Superstructure

All fasteners to superstructure must be designed by the Rondo/ Project Engineer in accordance with AS 5216 and all other relevant Australian Standards and Provisions of the National Construction Code (NCC).

Fastener manufacturer/supplier to provide compliance documentation to ensure design intent is satisfied.

Control Joints

Movement and stresses caused by hygrometric (moisture caused) and thermal fluctuations can result in deformation and damage to plasterboard linings.

Control joints are used to accommodate these dimensional changes in plasterboard but must also be provided to allow for structural or seismic movement. Control joints must be made through the support framing system and the perforated plasterboard linings.

Control joints in Stratopanel must be installed at all construction joints in the building and at the following locations. Refer Architect for specific location:

- 12 m maximum centres in both directions for ceilings
- At changes of substrate material for plasterboard lining
- At locations of control and/or movement joints in the superstructure.

DESIGN CONSIDERATIONS CONT.

Seismic

Non-structural components such as ceilings, including Stratopanel and framing, often represents a high percentage of a project's capital investment. Failure of the components in an earthquake has the potential to cause harm, block egress, impede rescue efforts and can disrupt the building's function. The basic objective of seismic design for non-structural components is to provide life safety, minimise property loss and functional loss.

All framing components and connections must be suitably designed by Rondo in accordance with AS/NZS 1170.4 Earthquake Actions and other relevant Standards for use in seismic applications.

There are a number of methods to design a ceiling system for seismic actions, the following are generally 2 accepted methods. Seismic compliance refers to the use of approved systems and designs that meet the seismic design requirements of a building project to provide life safety to occupants and maintain building function during and after an earthquake.

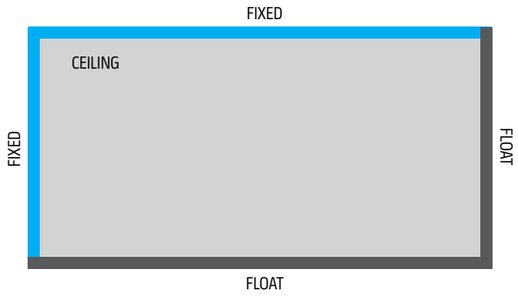
Seismic Design Solutions Include:

Method 1: Perimeter Restrained Ceilings

a) Perimeter fixing on adjacent edges

Ceiling is fixed to the perimeter on two adjacent sides and a seismic sliding joint is used on the opposite sides. Lateral loads are transferred from the ceiling to the perimeter support (wall/bulkhead/partition) throughthe perimeter fixing (Figure 3).

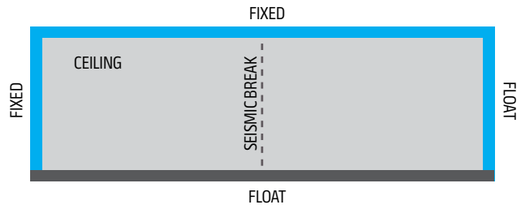
Figure 3: Perimeter fixing on Adjacent Edges



b) Perimeter fixing on more than two edges (with seismic breaks)

To accommodate installation of ceilings with longer spans, the ceiling is split up into smaller sections by means of seismic breaks. The ceiling can then be fixed to the perimeter on opposite sides. Lateral loads are transferred through perimeter fixings to the main structure. Seismic breaks can be constructed in one or two directions (Figure 4). Seismic breaks in ceilings may also be required at the location of movement joints or seismic breaks in the main structure.

Figure 4: Perimeter Fixing on More Than Two Edges



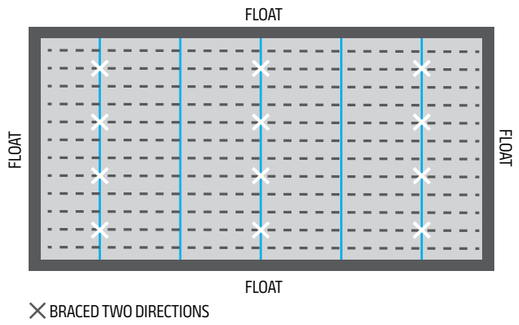
DESIGN CONSIDERATIONS CONT.

Method 2: Back Braced Ceilings

a) Back Bracing in Two Directions

In this method, the ceiling is restrained to the structure above with a series of back braces. Floating connections are required around the entire perimeter, as the ceiling may not be braced to both the structure above and the perimeter. Bracing shall be placed at 45° (nominal) angles in both directions as shown in Figure 5 and in accordance with manufacturers specifications.

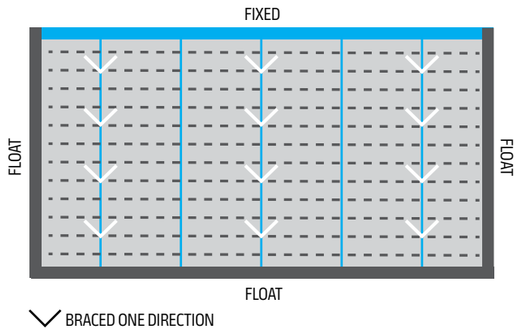
Figure 5: Back Bracing in Two Directions



b) Back Bracing in One Direction

Bracing in one direction is used in long corridors and rooms. In this method, the ceiling is restrained to the structure above with a series of back braces only in one direction. A floating connection is required on perimeters as shown in Figure 6, as the ceiling may not be braced to both the structure above and the perimeter. Bracing shall be placed at 45° (nominal) angles in one direction as shown in Figure 6 and in accordance with manufacturers specifications.

Figure 6: Back Bracing in One Direction



INSTALLATION

Installation Notes

- Install Stratopanel system only when building has been closed from external weather
- Stratopanel to be used for non-trafficable and internal ceilings only
- Measure and locate the middle of the room/space in both directions, X-X and Y-Y. Calculate how many full size panels can be accommodated in both directions and work out perimeter panel size (cut panels) for both ends to minimise wastage
- Install furring channel at the correct spacing with respect to Stratopanel type (refer to span table). The Rondo 605 furring channel must be set out and located at the short end of Stratopanel boards throughout ceiling. Ensure a Rondo 605 furring channel is located at the full panel and perimeter panel interface
- Stratopanel to be installed across and square to furring channels, ensure short ends of panel meet on a wide face furring channel. Note Stratopanel short end joints do not need to be staggered
- Fix Stratopanel in accordance with screw or screw cap fixing system details
- Cleaneo Caps should only be used with the respective patterns including 8/18 R, 12/25 R and 12/25 Q. **Cap screws have low shear capacity and limited seismic applications, refer to Rondo and Knauf for information**
- Align UFF edges with red and blue markings during installation
- It is not recommended to rotate Random Rectangular RE and random plus 8/15/20R as they will not have the same continuous pattern when rotated
- Control joints in internal ceilings should be spaced at 12 m max intervals in both directions
- 2.5 kg/m^2 allowance is prescribed for Stratopanel for thermal or acoustic insulation loads
- Refer to Rondo for steel framing design, details and guidance on suitable fixing methods for intended usage of Stratopanel with Keylock Systems

Stratopanel Span for Perforation Patterns

Table 11: Span (Framing Centres) for Stratopanel Standard Range

Perforation Patterns	Maximum Furring Channel Spacing
Circular 8/18 R	333 mm
Circular 12/25 R	333.3 mm
Square 12/25 Q	333.3 mm
Alternating Circular 12/20/66 R	330 mm
Random Plus 8/15/20 R	333.3 mm
Random Rectangular RE	333.3 mm

Stratopanel Ceiling Installation

Step 1

Plan ceiling layout as per architect's design identifying centre of ceiling space, control joint, seismic joint locations, access panels and perimeter treatment. Install Rondo Keylock Suspended Ceiling System with 129 Furring Channel and 605 Furring Channel where required to Rondo's design and details.

Step 2

Set up reference line with laser or string line in both directions as indicated, both reference lines should be square. Cut perimeter panel to size (off cut may be used at the other perimeter end of first row by rotating 180º) and install first panel in alignment with the two reference lines and then progressively install panels along the first row. Ensure alignment of UFF edge markings are as per details shown and short edges of Stratopanel coincides with Rondo 605 Furring Channel. Site cut edges of Stratopanel or plasterboard shall be primed with PVA based primer prior to application of Uniflott at joints.

Step 3

Continuously check the perforations are aligned in the Y-Y direction of panels. The first row of panels is now installed and square to the reference lines in both directions. Continue to install the second row of panels in the same manner as per the first row. Continue to progressively check the alignment of perforations in the X-X and Y-Y and diagonal directions.

Step 4

Progressively install Stratopanel until ceiling is complete following the same principles.

Step 5

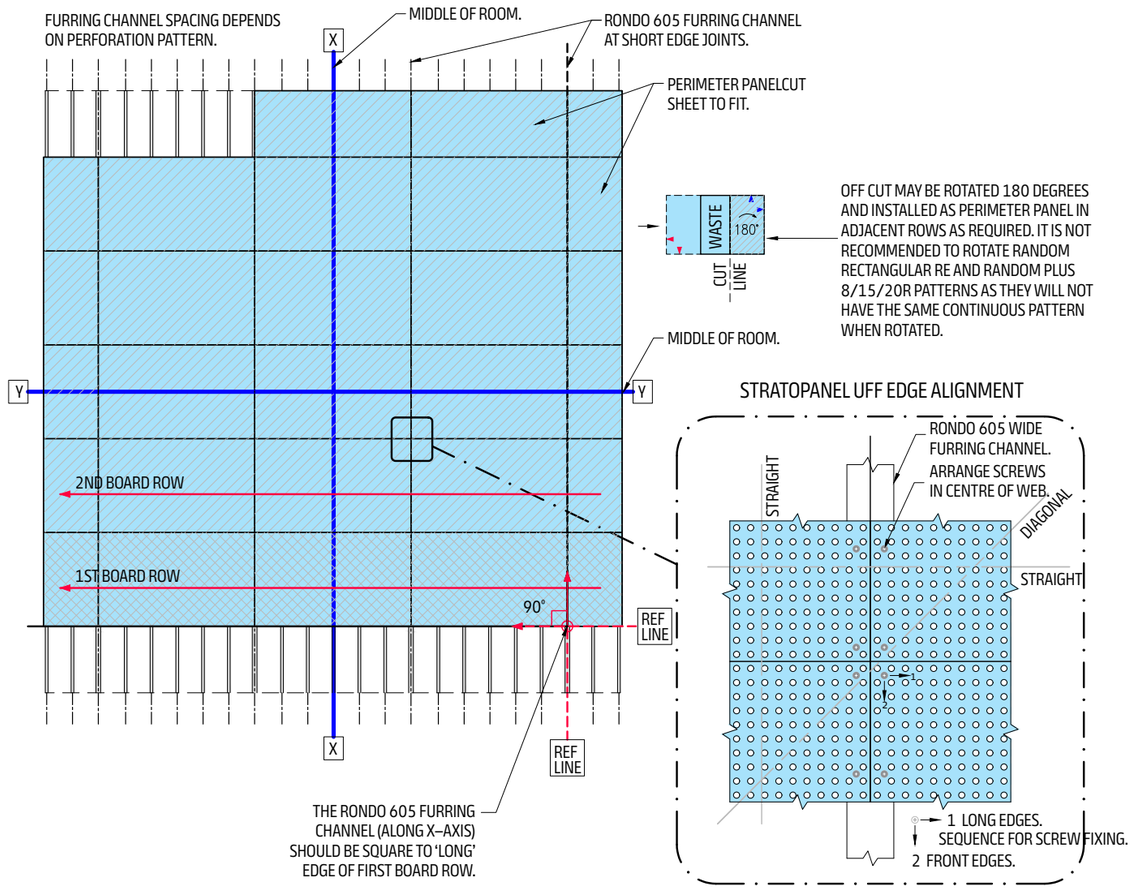
Fill joints and screw heads with Uniflott compound and specified topping compound as detailed. Complete perimeter treatments as detailed and specified by designer. Allow to dry as per product specification and sand as detailed.

Step 6

Ceiling ready for paint decoration, refer to details.

INSTALLATION CONT.

Figure 7: Stratopanel Installation Layout

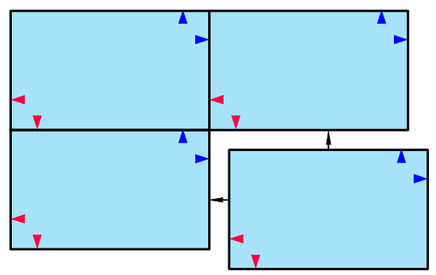


ALIGN UFF EDGES WITH RED AND BLUE MARKINGS DURING INSTALLATION.

RED MARK
BLUE MARK

PERIMETER PANEL ROTATED 180º WILL ALIGN BLUE AND BLUE UFF EDGES. (OR RED TO RED UFF EDGES).

FOR MORE INFORMATION REFER TO FIGURE 2: UFF JOINT EDGE DETAILS ON PAGE 8.



INSTALLATION CONT.

Screw Fixing Details

Table 12 : Screw Requirements

Product	Screw Type	Screw spacing in the field of panels	Screw spacing end of panels (short edge)
All Stratopanel range	6-18 x 25 mm Type S	300 mm max ctrs	200 mm max ctrs
8 mm Round Caps	Supplied black screws		
12 mm Round Caps	Supplied black screws		
12 mm Square Caps	Supplied black screws		

Notes

- *Screws sequence to be started from the corner along the long edge and then fasten along the short edge.*
- *Cleaneo Caps and supplied screws should only be used with the respective matching patterns including 8/18 R, 12/25 R and 12/25 Q. This fixing system has limited seismic applications, refer Knauf and Rondo for information.*
- ***Stratopanel is installed using a screw fixing system only, the use of adhesive is not permitted.***
- *Ensure screws are not overdriven, to avoid cracking during installation. If the board is cracked during or prior to installation, it must be replaced with a new sheet.*
- *Rondo should be consulted for guidance on suitable fixing methods for the intended usage of the Stratopanel and Keylock systems in seismic applications. This information should be included in the design request sheet, along with any relevant specifications for the specific application.*

Indicative Screw Placement Details

Figure 8: Random Circle Patterns

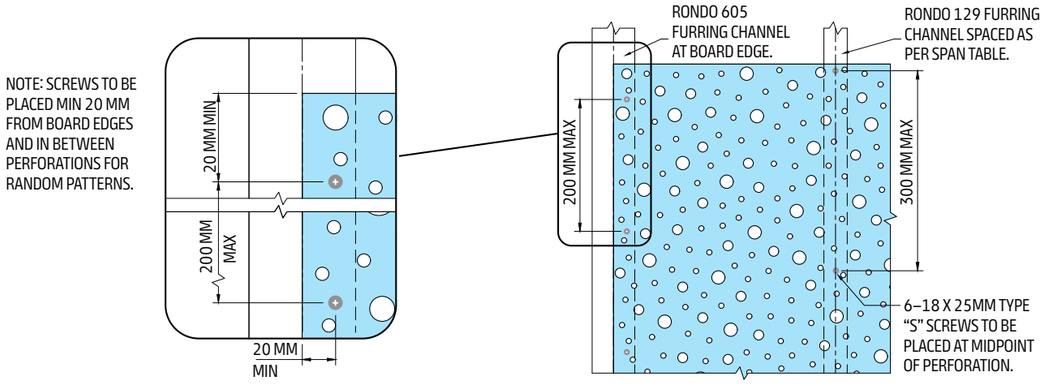
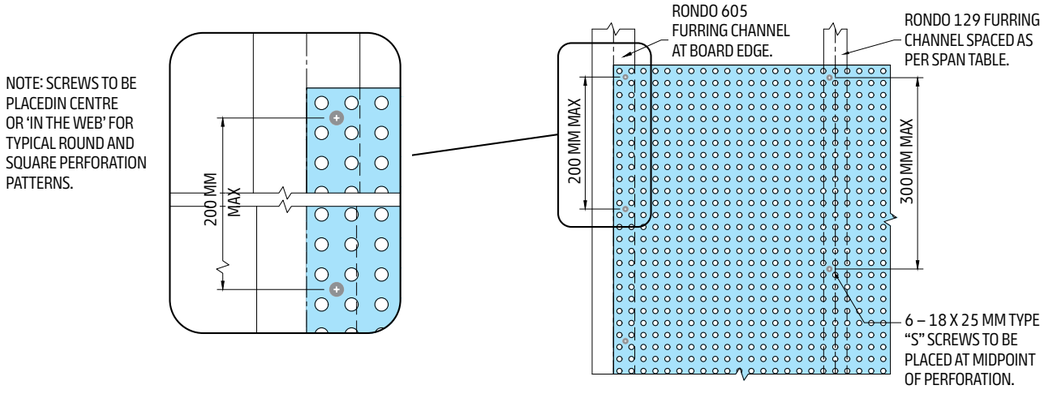


Figure 9: Standard Circle Patterns



INSTALLATION CONT.

Figure 10: Random Rectangle Patterns

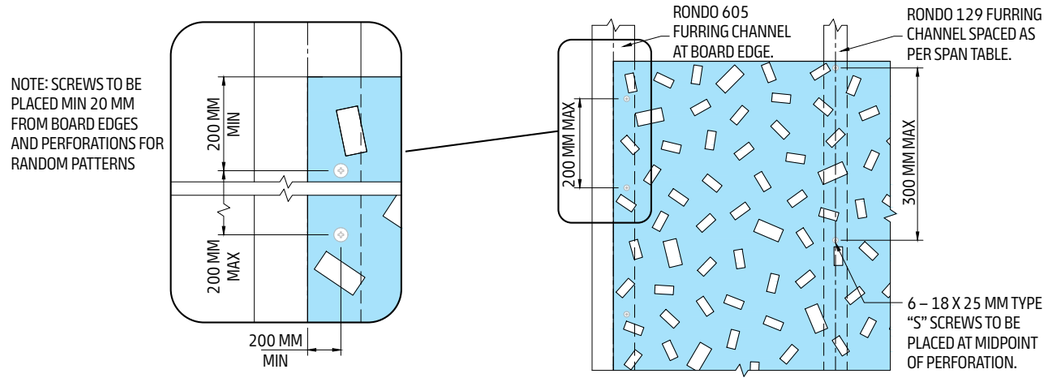
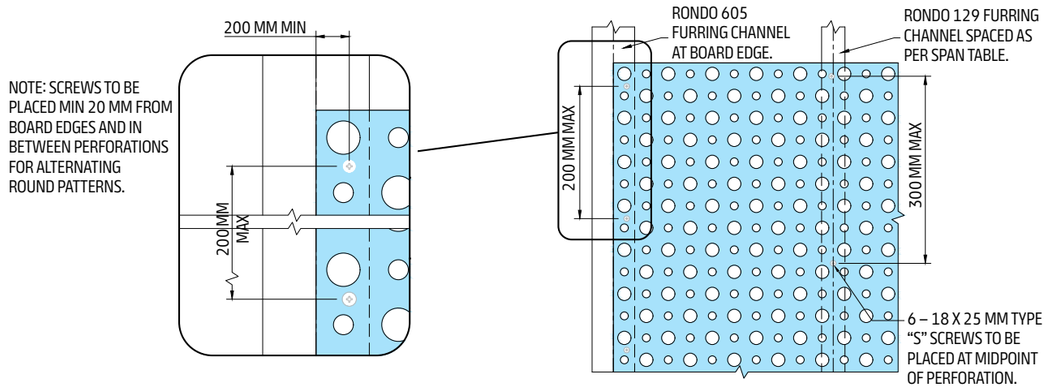
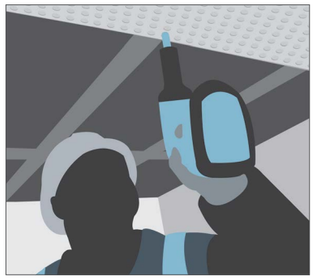


Figure 11: Alternating Circle Patterns



INSTALLATION CONT.



Fixing Procedure

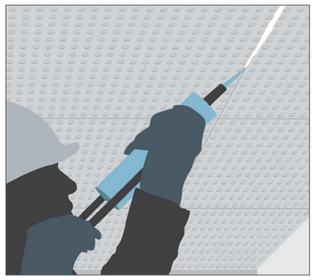
Step 1: Fixing Knauf Perforated Plasterboards

Once ceiling framing system has been set out as per recommended layout and to manufacturer's details, screw fix Stratopanel as per details – 300 mm maximum centers in the field and 200 mm maximum centers at the edges with 6-18 x 25 mm Type S screws. Align UFF edges with red and blue markings during installation.

Alternative fixing systems using screw caps are available for limited seismic applications. Refer to installation details or contact TecASSIST for more information.

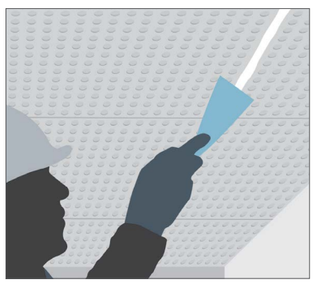
Step 2: Ensure Joints are Clean of Dust & Prime Cut Joints

Site cut edges must be primed with a PVA based primer prior to application of Uniflott.



Step 3: Apply Uniflott Jointing Compound

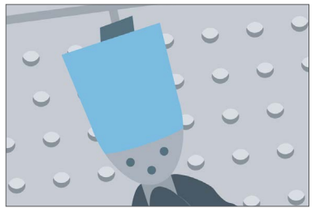
Ensure that tools are cleaned prior and after use. Cut the nozzle of an applicator. Using a standard sealant gun, fully fill the joint and skim over screw heads.

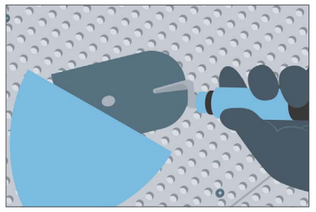


Step 4: Carefully Remove the Excess

When the Uniflott Compound has stiffened in the joints, remove any excess with a jointing knife, being careful not to damage the paper. To remove Knauf Uniflott push the jointing knife away from you.

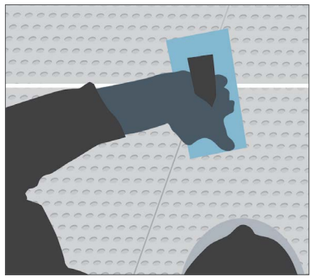
INSTALLATION CONT.





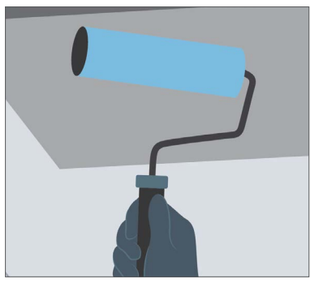
Step 5: Apply Topping Compound to Joints and Screw Heads

Care should be taken not to fill perforations with compounds.



Step 6: Sanding

Once the joints are completely filled and set, sand to a flat and even finish.



Step 7: The Stratopanel Ceiling is Ready for Painting Decoration, Ensure 3 Coat Painting System to Manufacturers' Specification

Note painting system should be applied with a short-napped roller to ensure the acoustic felt on the back of Stratopanel is not sealed. **DO NOT SPRAY** as filled or blocked perforations will reduce the absorptive performance of Stratopanel.

PRODUCT CARE AND INSTRUCTIONS

Handling, Delivery and Storage

To maintain Stratopanel in optimal condition before installation, please follow Knauf's handling, delivery and storage guideline. The boards should always be protected from damage or any conditions that could compromise their final appearance or performance.

Stratopanel must remain dry, stored off the ground and fully shielded from weather exposure. Delivery to the site should only occur once the building has reached the lock-up stage. To minimise the risk of damage, Knauf recommends to schedule delivery as close to the installation time as possible. Special care must be taken to avoid damaging the edges or surface of the boards.

Prolonged exposure to excessive humidity during storage can cause the plasterboard to become damp, soft or appear defective. If this occurs, the boards should be allowed to dry thoroughly and handled with caution during installation to prevent further damage.

Notes

Tips to Prevent Plasterboard from Absorbing Humidity:

- *Keep plasterboard away from open water sources, such as wet floors.*
- *Use plastic wrapping to protect the boards.*
- *Ensure proper ventilation in the storage area.*
- *Schedule installation shortly after delivery.*
- *For optimal results, install during dry weather conditions.*

Safety and First Aid

Stratopanel is not classified as hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC).

It is non-toxic and non-flammable. For detailed safety information including handling, storage and first aid guidance, please visit the relevant product page on **knauf.com** to access safety datasheet and additional resources.

INSTALLATION DETAILS

Scan the QR code to view the complete installation details for Stratopanel including the following:

- Stratopanel Perforation Details
- Stratopanel Installation
- Stratopanel Fixing and Framing Details
- Stratopanel Cleaneo Caps Installation Details
- Stratopanel Perimeter Finishing Details
- Stratopanel Perimeter Finishing Details – Proud Border
- Stratopanel Joint Details
- Stratopanel Joint Details – Parallel
- Stratopanel Control Joint Details – P35 Expansion Joint Perpendicular
- Stratopanel Control Joint Details – Stopping Angle Joint Perpendicular
- Stratopanel Control Joint Details – Express Joint Perpendicular
- Stratopanel Perimeter Details – Free End
- Stratopanel Perimeter Details – Fixed End
- Stratopanel Acess Panel Framing Details.

NOTES

APPENDIX A

APPENDIX A

Table 13: Detailed Accoustic Data – Standard Pattern

Perforation Pattern *Open Area*	Insulation	Overall Ceiling Depth, mm	Absorption Coefficient, α_s										Absorption Coefficient, α_s								Report No.	α_w	Class	SAA
			⅓ Octave Centre Frequency, Hz										⅓ Octave Centre Frequency, Hz											
			100	125	160	200	250	315	400	500	630	800	1k	1.25k	1.6k	2k	2.5k	3.15k	4k	5k				
Round 8/18R *15.5%*	nil	E200	0.38	0.36	0.53	0.64	0.71	0.74	0.80	0.78	0.79	0.70	0.61	0.70	0.67	0.65	0.62	0.61	0.57	0.59	AC356-01	0.70	C	0.70
		E400	0.40	0.54	0.57	0.68	0.81	0.76	0.76	0.67	0.69	0.73	0.71	0.73	0.71	0.69	0.64	0.61	0.63	0.61	AC356-04	0.70(L)	C	0.72
	KI 50G11	E200	0.50	0.48	0.64	0.80	0.85	0.85	0.81	0.79	0.80	0.77	0.76	0.81	0.74	0.73	0.67	0.67	0.65	0.66	AC356-02	0.75(L)	C	0.78
		E400	0.45	0.62	0.57	0.73	0.79	0.73	0.75	0.76	0.81	0.85	0.83	0.82	0.78	0.76	0.71	0.70	0.71	0.73	AC356-03	0.80	B	0.78
Round 12/25R *18.1%*	nil	E200	0.43	0.35	0.55	0.62	0.80	0.77	0.86	0.81	0.79	0.70	0.63	0.71	0.73	0.69	0.68	0.64	0.54	0.59	AC359-09	0.70(L)	C	0.73
		E400	0.34	0.42	0.59	0.66	0.81	0.82	0.73	0.62	0.70	0.74	0.70	0.75	0.76	0.73	0.68	0.63	0.56	0.59	AC359-08	0.70(L)	C	0.73
	KI 50G11	E200	0.52	0.40	0.66	0.77	0.84	0.85	0.92	0.84	0.80	0.77	0.78	0.87	0.80	0.76	0.71	0.72	0.65	0.70	AC359-16	0.80	B	0.81
		E400	0.40	0.50	0.60	0.74	0.81	0.83	0.77	0.75	0.83	0.86	0.84	0.87	0.84	0.80	0.76	0.74	0.67	0.69	AC359-01	0.80	B	0.81
Alternating Circular 12/20/66R *19.6%*	nil	E200	0.40	0.31	0.52	0.64	0.80	0.79	0.92	0.88	0.86	0.74	0.65	0.68	0.58	0.61	0.59	0.54	0.55	0.55	AC359-12	0.65(LM)	C	0.73
		E400	0.38	0.37	0.58	0.71	0.83	0.84	0.75	0.63	0.70	0.77	0.74	0.70	0.65	0.65	0.63	0.58	0.57	0.60	AC359-05	0.70(L)	C	0.72
	KI 50G11	E200	0.53	0.42	0.68	0.81	0.91	0.92	0.96	0.88	0.84	0.81	0.84	0.90	0.74	0.69	0.68	0.64	0.66	0.67	AC359-13	0.75(L)	C	0.83
		E400	0.43	0.53	0.65	0.75	0.83	0.90	0.78	0.78	0.86	0.91	0.90	0.90	0.80	0.74	0.70	0.70	0.71	0.74	AC359-04	0.80(L)	B	0.82
Square 12/25Q *23.0%*	nil	E200	0.42	0.27	0.53	0.66	0.79	0.82	0.94	0.92	0.86	0.73	0.64	0.74	0.75	0.73	0.67	0.50	0.58	0.64	AC359-11	0.70(L)	C	0.77
		E400	0.38	0.42	0.58	0.70	0.82	0.87	0.75	0.62	0.70	0.77	0.72	0.78	0.81	0.76	0.68	0.55	0.63	0.65	AC359-06	0.75(L)	C	0.75
	KI 50G11	E200	0.52	0.42	0.68	0.88	0.98	1.02	1.04	0.92	0.88	0.86	0.87	0.95	0.93	0.85	0.83	0.68	0.75	0.79	AC359-14	0.90(L)	A	0.92
		E400	0.46	0.56	0.68	0.80	0.89	0.95	0.86	0.81	0.92	0.94	0.94	0.97	0.95	0.91	0.86	0.77	0.78	0.82	AC359-03	0.90	A	0.90
Random Plus 8/15/20 R *9.9%*	nil	E200	0.40	0.32	0.51	0.51	0.69	0.63	0.68	0.63	0.64	0.58	0.55	0.56	0.51	0.47	0.40	0.39	0.41	0.44	AC359-10	0.50(L)	D	0.57
		E400	0.31	0.40	0.49	0.51	0.63	0.67	0.61	0.54	0.59	0.63	0.58	0.61	0.57	0.48	0.41	0.41	0.40	0.43	AC359-07	0.55(L)	D	0.57
	KI 50G11	E200	0.47	0.41	0.54	0.62	0.68	0.67	0.66	0.65	0.63	0.61	0.61	0.65	0.55	0.47	0.41	0.38	0.41	0.43	AC359-15	0.55(L)	D	0.60
		E400	0.32	0.49	0.50	0.56	0.62	0.68	0.60	0.61	0.65	0.68	0.63	0.65	0.59	0.51	0.46	0.43	0.43	0.46	AC359-02	0.55(L)	D	0.60
Random Rectangular RE *13.6%*	nil	E200	0.45	0.36	0.56	0.60	0.73	0.71	0.81	0.78	0.75	0.64	0.59	0.68	0.57	0.43	0.40	0.38	0.39	0.37	AC359-20	0.50(LM)	D	0.64
		E400	0.43	0.48	0.58	0.65	0.72	0.78	0.70	0.63	0.67	0.70	0.63	0.71	0.63	0.47	0.45	0.41	0.44	0.41	AC359-17	0.55(L)	D	0.65
	KI 50G11	E200	0.58	0.46	0.61	0.75	0.79	0.78	0.80	0.77	0.75	0.68	0.71	0.75	0.65	0.50	0.47	0.47	0.49	0.51	AC359-19	0.60(L)	C	0.70
		E400	0.50	0.55	0.56	0.65	0.70	0.77	0.69	0.73	0.76	0.81	0.74	0.79	0.70	0.55	0.50	0.50	0.50	0.48	AC359-18	0.65(L)	C	0.70

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