Technical Characteristics

Strebord®

38mm Mezzanine Floor Panels P6 and P5 (MR)

Strebord® P6 Standard Core

Strebord® P5 (MR) Moisture Resistant Core

Strebord® 38mm Mezzanine Floor Panels have been used for over 30 years, in many thousands of installations. During this time, applications have become more varied in terms of end use, and the basis of performance data and known strength properties have supported this. The information given in this publication provides technical characteristics for Strebord®, allowing designers/specifiers to integrate into structures, in line with the latest Eurocode 5 and BS EN standards.

Design load information

Strebord® floor panels are manufactured to performance levels, at or above the limits specified for their appropriate type in BS EN 312-5/6:2010 and CE marked ref NP6StrebordDOP and NP5StrebordDOP (available on request).1000's of production quality control tests and 100's of tests specific to industrial flooring usage support the technical data given in this publication.

Physical Properties (BS EN 312 Minimum Requirement)

		P6	P5 (MR)
Mean Bending Strength	**N/mm²**	14	10
Mean Modulus of Elasticity in Bending	**N/mm²**	2200	1700
Mean Cross Tensile Strength	**N/mm²**	0.3	0.3
Moisture Content ex Factory	**%**	6-9	6-9
Thickness Tolerance	**mm +/-**	0.3	0.3
Length/Width Tolerance	**mm +/-**	5	5
Perpendicularity per 1000mm Side Length	**mm**	2	2
Approximate Weight	**Kg/m²**	24	24

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Technical Characteristics

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The design guidance and tables given below are based on the limit state design principles.

Uniformly Distributed Load

Uniformly Distributed Long Term Loads, given in the table are based on load bearing characteristics given in BS EN 312 2010, and design values for structural calculations based on BS EN 12369-1:2001 and formulated using modifications factors detailed in Eurocode 5 BS EN 1995-1-1;2004 +A1:2008 where $\gamma_Q = 1.35$. The design load for a particular board/span/service condition is the smaller value of its 'Strength Limit' and the appropriate 'Deflection Limit'.
Service classes, as defined in BS EN 1995-1-1;2004 +A1:2008.

UDL Double Span (kN/m²)

P6 — Service Class 1

		400	480	525	600	700	800
Strength Limit		40.1	27.9	23.3	17.8	13.1	10.0
Deflection Limit	**L/100**	93.3	54.0	41.3	27.6	17.4	11.7
	L/200	46.7	27.0	20.6	13.8	8.7	5.8
	L/300	31.2	18.2	13.8	9.2	5.8	3.9

P5 — Service Class 1

		400	480	525	600	700	800
Strength Limit		25.6	17.8	14.9	11.4	8.36	6.4
Deflection Limit	**L/100**	65.0	37.6	28.8	19.3	12.1	8.1
	L/200	30.3	18.8	14.4	9.6	6.1	4.1
	L/300	21.7	12.5	9.6	6.4	4.0	2.8

P5 — Service Class 2

		400	480	525	600	700	800
Strength Limit		17.1	11.9	9.9	7.6	5.6	4.3
Deflection Limit	**L/100**	43.3	25.1	19.2	12.8	8.1	5.4
	L/200	21.7	12.5	9.6	6.4	4.0	2.5
	L/300	14.5	8.3	6.4	4.3	2.7	1.8

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Design Point Loads

Design point loads given in the table are based on performance testing using the requirements of BS EN 1192:1998 'Timber Structures-Test Methods-Performance of Structural Floor Decking'; and allow for partial safety factor $\gamma_Q = 1.35$ and $K_{red} = 0.89$, in accordance with the design requirements to EN 12871:2013 National Foreword.
Load duration classes, as defined in BS EN 1995-1-1;2004 +A1:2008.

Design Point Loads (kN) for Ultimate Limit State Conditions (50 x 50mm)

P6 | Service Class 1

		400	480	525	600	700	800
Characteristic (5% tile) Ultimate Load kN		12.6	12.2	11.9	11.6	11.2	10.9
Duration	**Long**	4.0	3.9	3.8	3.7	3.6	3.5
	Medium	5.7	5.5	5.4	5.2	5.0	4.9
	Short	7.3	7.0	6.9	6.7	6.5	6.3
Design Point Loads for Serviceability Limit State Conditions (50 x 50mm), (Deflection/Stiffness Criteria)		5.9	5.0	4.6	4.1	3.5	3.1

P5 (MR) | Service Class 1

		400	480	525	600	700	800
Characteristic (5% tile) Ultimate Load kN		12.1	11.8	11.2	10.7	9.9	9.3
Duration	**Long**	3.5	3.4	3.2	3.1	2.9	2.7
	Medium	5.1	4.9	4.7	4.4	4.1	3.9
	Short	6.6	6.4	6.1	5.8	5.4	5.1
Design Point Loads for Serviceability Limit State Conditions (50 x 50mm), (Deflection/Stiffness Criteria)		5.8	5.6	5.4	5.1	4.6	3.4

P5 (MR) | Service Class 2

		400	480	525	600	700	800
Characteristic (5% tile) Ultimate Load kN		12.1	11.8	11.2	10.7	9.9	9.3
Duration	**Long**	2.3	2.3	2.2	2.1	1.9	1.8
	Medium	3.5	3.4	3.2	3.1	2.9	2.7
	Short	4.7	4.5	4.3	4.1	3.8	3.6
Design Point Loads for Serviceability Limit State Conditions (50 x 50mm), (Deflection/Stiffness Criteria)		5.1	5.0	4.8	4.5	4.0	3.0

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Technical Notes

Falcon Panel Products have carried out tests and evaluation of various loading configurations, including spreader plates up to 200 x 200 mm, crushing strength and composite, double layer systems. For further information please contact Falcon Panel Products direct. It is essential to provide sound locations for handrails and this is usually achieved by fixing the handrail base through to the primary or secondary beams. Where necessary, handrail connections direct to the Strebord® can be achieved by appropriate structural design of the handrail base and associated washer plate.

Installing Strebord®

Strebord® mezzanine floor panels are usually fixed direct and simply to the supporting structure, with long edges running perpendicular to the beams. Ensure the longer profile of the tongue is uppermost and that the boards are laid in a traditional staggered brick-bond pattern with the short edges supported.
The perimeter of the floor should be fastened to continuous supports. A positive, reliable fixing is required and an adequate coverage of fixings is essential. Generally speaking we would recommend fixings 300 mm centres on every supporting member each panel crosses. A minimum 10 mm expansion gap is normally recommended between the deck edge and any wall, and for larger areas regular expansion gaps within the floor are advisable.

The loading figures are based on Strebord® tested with dry joints. Glueing the joints with a waterproof D3 PVA adhesive, will help reduce the risk of creaks and enhance the stated structural performance.

In order that Strebord® performs to the structural specification illustrated in this document, it requires a strong, stiff and stable supporting structure. Any deflections or deformations may result in excessive stress on the Strebord® flooring under loading, which may result in damage to panel edges.

Overlays, carpets, vinyls etc

It is not recommended to use water based paints/coatings on the Strebord® surface. When thin or shiny floor surface materials are laid over Strebord®, it is possible for the joints of the Strebord® to show through particularly after trafficking. It is advisable to have an additional layer of material between the Strebord® and top surface to sufficiently absorb any potential telegraphing.

Strebord® The environmentally responsible engineered particleboard

Contact your nearest Falcon Panel Products Depot

For standard, decorative or specialist panel products plus a reliable, quick turnaround service.

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