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BAF-19-129-S-A-UK
BDA Agrément®
EGGER Advanced
Structural Flooring System

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SCOPE OF AGRÉMENT

This Agrément relates to the EGGER Advanced Structural Flooring System (hereinafter the 'System'), consisting of particleboards which are adhesively and mechanically fixed to structural joists. The System is designed for use as an internal joisted floor construction.

SYSTEM DESCRIPTION

The System comprises EGGER P5, EGGER Peel Clean Xtra or EGGER Protect grade particleboards (hereinafter 'particleboards'), EGGER Joint & Joist D4 Adhesive (hereinafter 'EGGER Joint & Joist Adhesive') and hand-nailed ring shank nails (hereinafter 'nails'). The particleboards are adhesively bonded using EGGER Joint & Joist Adhesive and mechanically fixed using nails into C16 timber joist, timber I-section joist and steel C-section joist.

SYSTEM ILLUSTRATION



THIRD-PARTY ACCEPTANCE

NHBC - for detailed information see section 3.3 (Third-Party Acceptance).

STATEMENT

It is the opinion of Kiwa Ltd., that the System is fit for its intended use, provided it is specified, installed and used in accordance with this Agrément.

Chris Vurley, CEng
 Technical Manager, Building Products

Mark Crowther, M.A. (Oxon)
 Kiwa Ltd. Technical Director

SUMMARY OF AGRÉMENT

This document provides independent information to specifiers, building control personnel, contractors, installers and other construction industry professionals considering the fitness for the intended use of the System. This Agrément covers the following:

- Conditions of use;
- Production Control, Quality Management System and the Annual Verification procedure;
- System components and ancillary items, points of attention for the Specifier and examples of details;
- Installation;
- Independently assessed System characteristics and other information;
- Compliance with national Building Regulations, other regulatory requirements and Third-Party Acceptance, as appropriate;
- Sources.

MAJOR POINTS OF ASSESSMENT

Moisture Control - the System (see section 2.2.9):

- when incorporating EGGER Peel Clean Xtra or EGGER Protect particleboards, has satisfactory resistance to weather;
- can be left exposed for up to 60 days - EGGER Protect particleboards;
- can be left exposed for up to 42 days - EGGER Peel Clean Xtra particleboards.

Strength - a correctly designed and installed System will have sufficient strength and rigidity to sustain and transmit both dead and imposed floor loads (see section 2.2.10).

Fire Performance - the System is classified as European Classification D-s2, d0 or D-s2, d2, dependent on the airgap, in accordance with BS EN 13501-1 (see section 2.2.11).

Thermal Performance - the thermal conductivity (λ) of the particleboards shall be taken as 0.12 W/mK, in accordance with BS EN 13986 (see section 2.2.12).

Durability - the System is durable and has a design life equivalent to that of the building in which it is incorporated (see section 2.2.13).

CE Marking - the Agrément holder has responsibility for CE marking in accordance with all relevant harmonised European Product Standards (see section 2.2.14).

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CHAPTER 1 - GENERAL CONSIDERATIONS

1.1 - CONDITIONS OF USE

1.1.1 Design considerations

See section 2.2.

1.1.2 Application

The assessment of the System relates to its use in accordance with this Agrément and the Agrément holder's requirements.

1.1.3 Assessment

Kiwa Ltd. has assessed the System in combination with relevant test reports, technical literature, the Agrément holder's quality plan, DoPs and site visit as appropriate. The NHBC Standards has also been taken into consideration.

1.1.4 Installation supervision

The quality of installation and workmanship must be controlled by a competent person who must be an employee of the installation company.

The System must be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément.

1.1.5 Geographical scope

The validity of this document is limited to England, Wales, Scotland and Northern Ireland, with due regard to chapter 3 of this Agrément (CDM, national Building Regulations and Third-Party Acceptance).

1.1.6 Validity

The purpose of this BDA Agrément® is to provide for well-founded confidence to apply the System within the Scope described. The validity of this Agrément is three years after the issue date, and as published on www.kiwa.co.uk/bda.

1.2 - PRODUCTION CONTROL AND QUALITY MANAGEMENT SYSTEM

Kiwa Ltd. has determined that the Agrément holder fulfils all obligations in relation to this Agrément, in respect of the System.

The initial audit demonstrated that the Agrément holder has a satisfactory Quality Management System (QMS) and is committed to continuously improving their quality plan. Document control and record keeping procedures were deemed satisfactory. A detailed Production Quality Specification (PQS) has been compiled to ensure traceability and compliance under the terms of this Agrément.

1.3 - ANNUAL VERIFICATION PROCEDURE - CONTINUOUS SURVEILLANCE

To demonstrate that the System is in conformity with the requirements of the technical specification described in this Agrément, an Annual Verification procedure has been agreed with the Agrément holder in respect of continuous surveillance and assessment, and auditing of the Agrément holder's QMS.

This Agrément does not constitute a design guide for the System. It is intended as an assessment of fitness for purpose only.

2.1 - SYSTEM COMPONENTS AND ANCILLARY ITEMS

2.1.1 System components included within the scope of this Agrément

The following components are integral to the use of the System:

Item	Description	Dimensions
EGGER P5	Service class 2 ^A loadbearing particleboard in accordance with BS EN 1995-1-1; manufactured in accordance with BS EN 312	600 mm by 2400 mm by 18 mm or 22 mm thick
EGGER Peel Clean Xtra	EGGER P5 particleboard, covered with an easy-to-peel, anti-slip polyethylene film, which helps to prevent moisture ingress and provides an added moisture barrier upon completion	600 mm by 2400 mm by 18 mm or 22 mm thick
EGGER Protect	EGGER P5 particleboard, covered with a hard-wearing, anti-slip surface on both the top and underside of the board, which helps to prevent moisture penetration	600 mm by 2400 mm by 22 mm thick
EGGER Joint & Joist Adhesive	a methylene diphenyl isocyanate (MDI) based adhesive to BS EN 204 Class D4, for use in bonding board joints, bonding boards to joists and sealing edges; it can be used when installing in dry conditions and in light rain	-
mechanical fixings	galvanised or stainless steel nails	minimum 3 mm diameter by 45 mm long (for use with 18 mm thick particleboards) minimum 3 mm diameter by 55 mm long (for use with 22 mm thick particleboards)
timber joist [^]	solid timber joists, minimum grade C16, in accordance with BS EN 338	joist centres shall be: • maximum 450 mm when used with 18 mm thick particleboards; • maximum 600 mm when used with 22 mm thick particleboards.
timber I-section joist ^{^^}	engineered timber I-section joists of Use Class 1 and 2, in accordance with BS EN 335	-
steel C-section joist ^{^^}	galvanised steel C-section joists, galvanised in accordance with BS EN 10143	minimum 5 mm by 60 mm by 145 mm

^A moisture content in the particleboard corresponding to a temperature of 20 °C and the relative humidity of the surrounding air not exceeding 85 % for more than a few weeks per year

^{^^} the joists must be designed by a suitably qualified and experienced engineer to ensure they are adequate to resist the applied loading

2.1.2 Ancillary items falling outside the scope of this Agrément

Ancillary items detailed in this section may be used in conjunction with the System but fall outside the scope of this Agrément:

- tiles, slates and other floor finishes;
- web cleats for the steel C-section joists.

2.2 - POINTS OF ATTENTION TO THE SPECIFIER

2.2.1 Design responsibility

A Specifier may undertake a project specific design in which case it is recommended that the Specifier co-operates closely with the Agrément holder. The Specifier or installing contractor is responsible for the final as-built design.

2.2.2 Applied building physics (heat, air, moisture)

A competent specialist shall check the physical behaviour of a project specific design incorporating the System and if necessary can offer advice in respect of improvements to achieve the final specification. The Specialist can be either a qualified employee of the Agrément holder or a suitably qualified consultant (in which case it is recommended that the consultant Specialist co-operates closely with the Agrément holder).

2.2.3 General design considerations

The particleboards are manufactured in accordance with BS EN 312.

EGGER P5 particleboards must be installed in dry conditions only.

18 mm thick particleboards may be used with 450 mm joist centres; 22 mm thick particleboards may be used with 450 mm or 600 mm joist centres.

Where particleboards abut a rigid upstand, a minimum 10 mm expansion gap should be provided. For large areas of floor, a greater expansion gap may be required at upstands with intermediate expansion gaps of 2 mm per linear metre of floor.

Floor finishes should be designed so as not to trap any water spillage below the floor.

Timber joists should be treated with preservative when built into solid external walls. Timber I-section joists and steel C-section joists should not be built into solid external walls. All joists should have a minimum breadth of 37 mm for fixing the particleboards.

The pendulum test values (PTV) of the particleboards in accordance with BS 7976-2 confirm:

- EGGER P5 particleboard is classified as moderate slip potential in accordance with HSE guidelines, and shall be finished with tiles, slates, etc. and never be exposed to wet conditions;
- EGGER Peel Clean Xtra particleboard is classified as low slip potential in accordance with HSE guidelines;
- EGGER Protect particleboard is classified as low slip potential in accordance with HSE guidelines.

The particleboards achieve a Class E1 formaldehyde specification, in accordance with BS EN 13986.

2.2.4 Project specific design considerations

No pre-installation survey is required for the installation of the System.

2.2.5 Permitted applications

Only applications designed according to the specifications given in this Agrément are permitted; in each case the installation company will have to co-operate closely with the Agrément holder.

2.2.6 Installer competence level

The System must be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément.

Installation can be undertaken by competent persons experienced in this sort of work.

2.2.7 Delivery, storage and site handling

The System components are delivered to site in suitable packaging, that bears the component name, the Agrément holder's name and the BDA Agrément® logo incorporating the number of this Agrément.

Store the System components in accordance with the Agrément holder's requirements. Particular care must be taken to:

- avoid exposure to direct sunlight for extended periods of time;
- avoid exposure to high or low temperatures for extended periods of time;
- store in a well-ventilated covered area to protect from rain, frost and humidity;
- store away from possible ignition sources.

It is strongly recommended that wherever possible the particleboards should be stored above ground level to reduce the risk of direct contact with moisture and to allow air to circulate.

Particular care should be taken to protect the edges and corners of the particleboards. Banding should be cut on arrival at site but the protective covering should not be removed until the boards are ready for conditioning.

EGGER Joint & Joist Adhesive is classified as harmful under The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP4)/Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) 2009. Containers bear the appropriate hazard warning.

2.2.8 Maintenance and repair

Once installed, the System does not require regular maintenance. For advice in respect of repair, consult the Agrément holder.

Performance factors in relation to the Major Points of Assessment

2.2.9 Moisture control

The water vapour resistance (μ) for the particleboards is 15 (wet cup) and 50 (dry cup), in accordance with BS EN 13986.

When subjected to standing water for a period of 60 days, a test floor comprised of EGGER Protect and EGGER Peel Clean Xtra particleboards with glued joints performed satisfactorily. Therefore, the System, when incorporating EGGER Protect or EGGER Peel Clean Xtra particleboards, can be installed in light rain.

Once correctly laid, the System, when incorporating:

- EGGER Protect particleboards can be left exposed to the elements for up to 60 days during the construction period;
- EGGER Peel Clean Xtra particleboards can be left exposed to the elements for up to 42 days during the construction period.

However, the System shall not be exposed to the elements for longer than the recommended exposure time, or during periods of particularly heavy rainfall.

In persistently wet conditions, some water penetration may be expected, which could result in some swelling around joints and fixings.

Provision should be made to prevent ground moisture affecting the System. This can be achieved by covering the ground below the floor with either:

- 50 mm oversite concrete or 50 mm fine aggregate on 1,200-gauge (0.3 mm thick) polyethylene damp proof membrane (hereinafter 'DPM'), laid on 50 mm sand blinding; or
- 100 mm oversite concrete on a clean, compacted, inert hardcore bed. Where necessary, this concrete should be protected against sulphate attack with the use of a lapped polyethylene DPM, not less than 1,200-gauge (0.3 mm thick); 1,000-gauge (0.25 mm) polyethylene DPM may be used where assessed in accordance with NHBC Technical Requirement R3.

The System should incorporate a 150 mm minimum void below the floor, ventilated by openings on at least two opposite sides and 1,500 mm² per metre run of external wall, or 500 mm² per square metre of floor area (whichever provides the largest area of ventilation).

2.2.10 Strength

The structural joists act to transfer load to the supporting primary structure.

The following characteristics are detailed in section 2.5.2:

- mean and characteristic tensile bond strength between the particleboards and joists;
- mean and characteristic shear strength between the particleboards and joists;
- bending strength;
- stiffness.

Imposed loads should be calculated in accordance with the relevant British Standards, including BS EN 1991-1-1.

To ensure that the joists are adequate to resist the applied loading, joists must be designed in accordance with BS EN 1993-1-1 for steel C-section joists and BS EN 1995-1-1 for timber joists and I-section timber joists by a suitably qualified and experienced engineer. The deflection limit, in accordance with Table NA.5 of the NA to BS EN 1995-1-1, is:

- span/250 between two supports;
- span/125 with a cantilever.

Timber joists should have an adequate bearing on the supporting structure as follows:

- timber joists on masonry walls - 90 mm (75 mm when the joist is not providing restraint to the wall) for end and intermediate support;
- timber joists on timber wall plates - 75 mm for end and intermediate support;
- timber I-section joist - 90 mm (45 mm when the joist is not providing restraint to the wall) for end support and 90 mm for intermediate support.

When tested for hard and soft-body impact, in accordance with ISO 7892 and BS EN 1195 respectively, the particleboards have satisfactory resistance to impact.

2.2.11 Fire performance

Reaction to fire

The System is classified as European Classification D-s2, d0 or D-s2, d2, dependent on the air gap, in accordance with BS EN 13501-1.

Fire resistance

A mechanically fixed floor construction can maintain its integrity and satisfy insulation requirements for a minimum of 15 minutes and is able to carry an appropriate load for a minimum of 30 minutes, in accordance with BR 128 when constructed as per the following example build-up:

- 15 mm thick particleboard on 37 mm breadth timber joists at maximum 600 mm centres;
- one layer of 15 mm plasterboard with joints taped and filled and backed by timber;
- 15 mm plasterboard mechanically fixed with 40 mm galvanised nails at 150 mm centres at every joist.

2.2.12 Thermal performance

The thermal conductivity (λ) of the particleboards shall be taken as 0.12 W/mK, in accordance with BS EN 13986.

2.2.13 Durability

The System will have a service life durability equivalent to that of the structure into which it is incorporated.

The particleboards have a Use Class 1 (UC 1), in accordance with BS EN 335.

2.2.14 CE Marking

The harmonised European standard for the particleboards is BS EN 13986.

2.3 - EXAMPLES OF TYPICAL DETAILS

Diagram 1 - detail of adhesive beads on joists

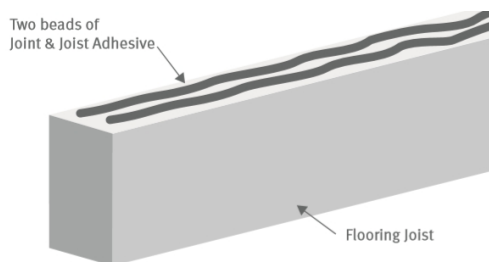


Diagram 2 - detail of application of adhesive on tongue-and-groove board

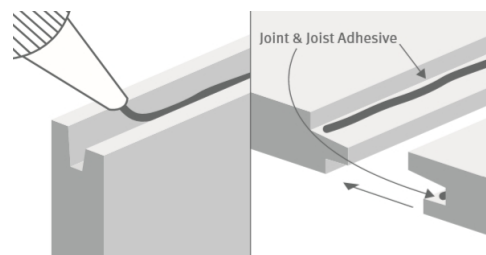


Diagram 3 - section of particleboards fixed at 450 mm joist centres

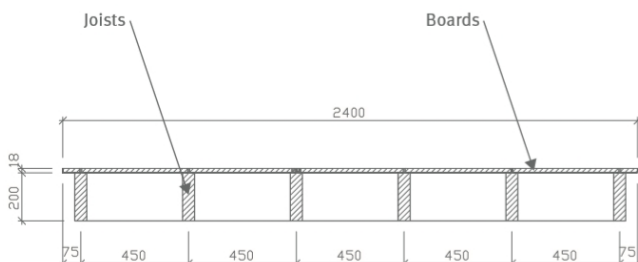


Diagram 4 - section of particleboards fixed at 600 mm joist centres

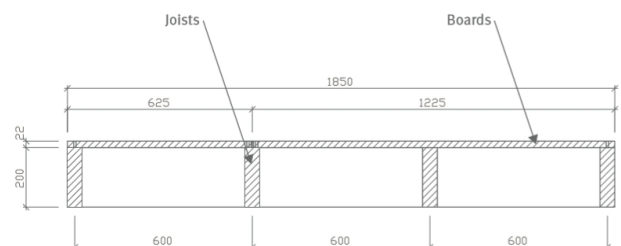


Diagram 5 - typical fixing layout of particleboards on 450 mm joist centres

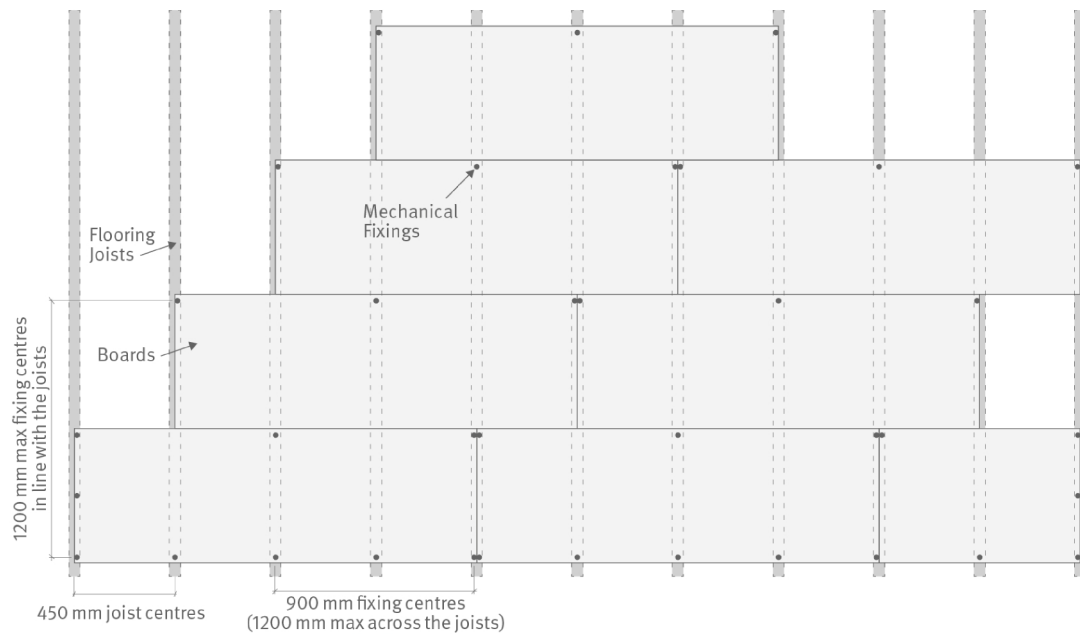
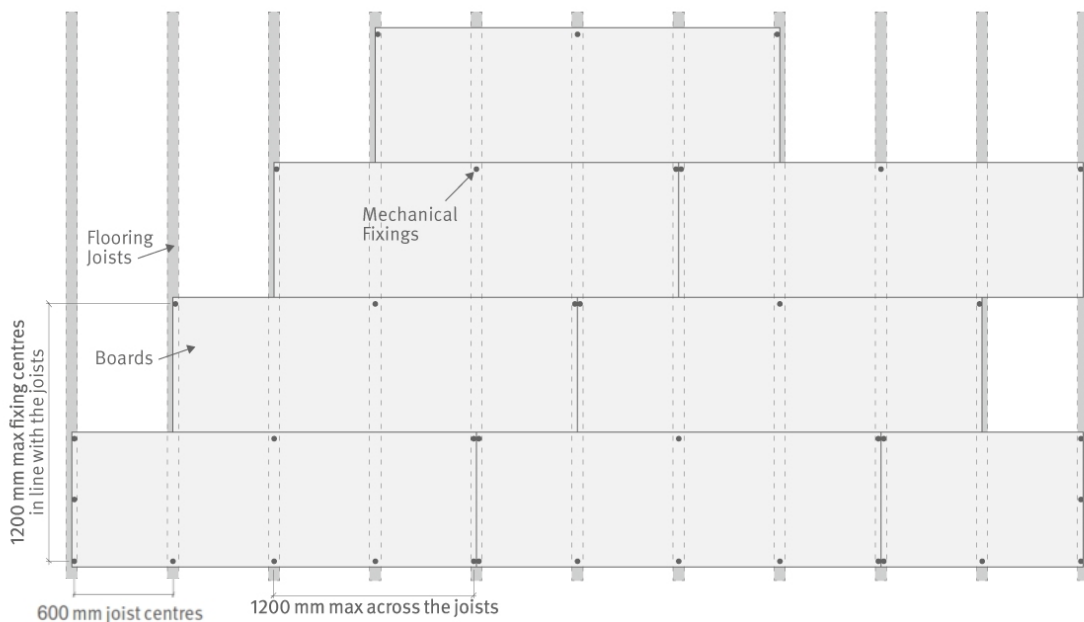


Diagram 6 - typical fixing layout of particleboards on 600 mm joist centres



2.4 - INSTALLATION

The System must be installed strictly in accordance with the instructions (hereinafter 'Installation Manual') of the Agrément holder and the requirements of this Agrément.

2.4.1 Installer competence level

See section 2.2.6.

2.4.2 Delivery, storage and site handling

See section 2.2.7.

2.4.3 Project specific installation considerations

No pre-installation survey is required for the installation of the System.

2.4.4 Preparation

The following considerations apply prior to commencement of the work:

- joists must be secured and braced before starting to lay the particleboards;
- any standing water on surface flanges should be wiped down;
- provision of future access is required to any pipes and services running between joists; joists should be trimmed to all four edges of any removable trap or duct cover around pipes and services;

- butt joints shall be staggered and supported by noggins or joists;
- the particleboards shall be fixed and supported on the perimeter edges of the short-ends by noggins or joists. Although long edges do not require intermediate support between joists, support noggings shall be fixed at floor perimeters where unsupported edges abut a wall
- an expansion gap of 10 mm or 2 mm per metre run of floor (whichever is greater), should be left against all walls and abutments when laying a row of boards parallel to the longest wall;
- intermediate gaps of a minimum of 10 mm should be incorporated into floors in excess of 10 m long, such as corridors, and should be finished with a compressible filler or proprietary movement joint cover;
- all short-end joints should always fall on the centre of a secured joist, including perimeter edges.

2.4.5 Outline installation procedure

The detailed installation sequence can be found in full in the Agrément holder's Installation Manual.

The key sequence for installation is:

- apply two parallel beads of EGGER Joint & Joist Adhesive to the top of the joist along the first row of particleboards;
- lay the particleboards across the joists and mechanically fix the first row using the specified nails (maximum 300 mm spacing along the joists), minimum 8 mm from the joint edge;
- apply EGGER Joint & Joist Adhesive directly to the groove and shoulder of the profile joint, continuing down the length of each particleboard to ensure that the entire joint is bonded once the particleboards are butted tightly together. Adhesive should foam out of the particleboard joint; any excess should be left to dry;
- follow the recommended fixing pattern every 1200 mm. For every short-end join, an additional mechanical fixing is needed
- apply EGGER Joint & Joist Adhesive along the next row of joists and stagger the next row of particleboards by approximately half a particleboard to form a brick bond laying pattern. Repeat the steps.

2.4.6 Finishing

The following finishing is required upon completion of the installation:

- seal any exposed nail heads, perimeter edges, cut edges and stairwells using EGGER Joint & Joist Adhesive;
- once the building is watertight, remove excess adhesive with a scraper.

2.5 - INDEPENDENTLY ASSESSED SYSTEM CHARACTERISTICS

2.5.1 Moisture control

Test	Standard	Result for EGGER particleboards		
		P5	Peel Clean Xtra	Protect
Water vapour resistance factor, μ	Wet cup	15		
	Dry cup	50		
	BS EN 13986			

2.5.2 Strength

Test	Standard	Result for EGGER particleboards					
		P5		Peel Clean Xtra		Protect	
		18 mm	22 mm	18 mm	22 mm	22 mm	
Bending strength, modulus of rupture (N/mm ²)	BS EN 310	16	14	16	14	14	
Stiffness, characteristic value F_{max} (kN)	450 mm span	4.37	5.22	4.58	5.86	6.90	
	600 mm span	-	4.94	-	5.99	5.44	
Stiffness, characteristic value R (N/mm)	450 mm span	704.6	850.2	876.7	1176.6	1011.5	
	600 mm span	-	763.7	-	783.8	715.0	
Tensile bond strength [^] (N/mm ²)	Timber joist	Mean	-	0.516	-	0.462	0.550
		Characteristic	-	0.453	-	0.461	0.419
	Timber I-section	Mean	-	0.346	-	0.338	0.383
		Characteristic	-	0.178	-	0.202	0.342
	Steel C-section	Mean	-	0.187	-	0.171	0.230
		Characteristic	-	0.132	-	0.140	0.171
Shear strength ^{^^} (N/mm ²)	Timber joist	Mean	-	0.503	-	0.411	0.369
		Characteristic	-	0.344	-	0.145	0.226
	Timber I-section	Mean	-	0.250	-	0.366	0.371
		Characteristic	-	0.141	-	0.180	0.191
	Steel C-section	Mean	-	0.135	-	0.213	0.190
		Characteristic	-	0.091	-	0.155	0.130
Hard-body impact (J)	450 mm span	10, no damage	10, no damage	10, no damage	10, no damage	10, no damage	
	600 mm span	-	10, no damage	-	10, no damage	10, no damage	
Soft-body impact (J)	450 mm span	400 ^{^^^}	450 ^{^^^}	350 ^{^^^}	400 ^{^^^}	400 ^{^^^}	
	600 mm span	-	400 ^{^^^}	-	400 ^{^^^}	400 ^{^^^}	
Uniformly Distributed Load (hereinafter 'UDL') ^{^^^} F_{max} (design load value) (kN/m ²)	450 mm span	8.7	-	5.9	-	-	
	600 mm span	-	-	-	-	5.2	

[^] UDL applied downwards across the area of the joist-particleboard bond

^{^^} shearing load applied sideways across the area of the joist-particleboard bond

^{^^^} small, circular cracks were observed

^{^^^} particleboards were fixed to light gauge galvanised steel C-section joists with a partial factor of 2 applied

2.5.3 Fire performance

Test		Standard	Result for EGGER particleboards		
			P5	Peel Clean Xtra	Protect
Reaction to fire	closed or open air gap not more than 22 mm behind the particleboard	BS EN 13501-1	D-s2, d2 [^]		
	closed, open or no air gap behind the particleboard		D-s2, d0 [^]		
Fire resistance		BR 128	R = 30, EI = 15 minutes ^{^^}		

[^] reaction to fire classification based on BS EN 13986

^{^^} when incorporated in a floor construction in accordance with BR 128 minimum requirements

2.5.4 Thermal performance

Test	Standard	Result for EGGER particleboards		
		P5	Peel Clean Xtra	Protect
Thermal conductivity (λ)	BS EN 13986	0.12 W/mK		

CHAPTER 3 - CDM, NATIONAL BUILDING REGULATIONS AND THIRD-PARTY ACCEPTANCE

3.1 - THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015 AND THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS (NORTHERN IRELAND) 2016

Information in this Agrément may assist the client, Principal Designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

3.2 - THE NATIONAL BUILDING REGULATIONS

In the opinion of Kiwa Ltd., the System, if installed and used in accordance with Chapter 2 of this Agrément, can satisfy or contribute to satisfying the relevant requirements of the following national Building Regulations.

3.2.1 - ENGLAND THE BUILDING REGULATIONS 2010 AND SUBSEQUENT AMENDMENTS

- A1 Loading - the System can sustain and transmit the design loads to the ground via the supporting structure
- B3(1)(3)(a) Internal fire spread (structure) - the System can contribute to satisfying this Requirement
- Regulation 7(1) Materials and workmanship - the System is manufactured from suitably safe and durable materials for their application

3.2.2 - WALES THE BUILDING REGULATIONS 2010 AND SUBSEQUENT AMENDMENTS

- A1 Loading - the System can sustain and transmit the design loads to the ground via the supporting structure
- B3(1)(3)(a) Internal fire spread (structure) - the System can contribute to satisfying this Requirement
- Regulation 7(1) Materials and workmanship - the System is manufactured from suitably safe and durable materials for their application

3.2.3 - SCOTLAND THE BUILDING (SCOTLAND) REGULATIONS 2004 AND SUBSEQUENT AMENDMENTS

3.2.3.1 Regulation 8(1)(2) Durability, workmanship and fitness of materials

- The System is manufactured from acceptable materials and is adequately resistant to deterioration and wear under normal service conditions, provided it is installed in accordance with the requirements of this Agrément

3.2.3.2 Regulation 9 Building standards - construction

- 1.1(a)(b) Structure - the System can sustain and transmit the design loads to the ground via the supporting structure
- Standard: 7.1(a) Statement of sustainability - the System can contribute to satisfying the relevant Requirements of Regulation 9, Sections 1 to 6, and will therefore contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the System can contribute to a construction meeting a higher level of sustainability as defined in this Standard

3.2.3.3 Regulation 12 Building standards - conversions

- All comments given under Regulation 9 also apply to this Regulation, with reference to Schedule 6 of The Building (Scotland) Regulations 2004 and subsequent amendments, clause 0.12 of the Technical Handbook (Domestic) and clause 0.12 of the Technical Handbook (Non-Domestic)

3.2.4 - NORTHERN IRELAND THE BUILDING REGULATIONS (NORTHERN IRELAND) 2012 AND SUBSEQUENT AMENDMENTS

- 23(a)(i)(iii)(iv)(b)(i) Fitness of materials and workmanship - the System is manufactured from materials which are suitably safe and acceptable as described in this Agrément
- 30(a)(b) Stability - the System can sustain and transmit the design loads to the ground via the supporting structure
- 35(1)(3) Internal fire spread - the System can contribute to satisfying this Requirement

3.3 - THIRD-PARTY ACCEPTANCE

NHBC - In the opinion of Kiwa Ltd., the System, if installed, used and maintained in accordance with this Agrément, can satisfy or contribute to satisfying the relevant requirements in relation to NHBC Standards, Chapters 5.2 Suspended ground floors, 6.4 Timber and concrete upper floors and 6.10 Light steel framing.

CHAPTER 4 - SOURCES

- BS EN 204:2016 Classification of thermoplastic wood adhesives for non-structural applications
- BS EN 310:1993 Wood-based panels. Determination of modulus of elasticity in bending and of bending strength
- BS EN 312:2010 Particleboards. Specifications
- BS EN 335:2013 Durability of wood and wood-based products. Use classes: definitions, application to solid wood and wood-based products
- BS EN 338:2016 Structural timber. Strength classes
- BS EN 1195:1998 Timber structures. Test methods. Performance of structural floor decking
- BS EN 1991-1-1:2002 Eurocode 1. Actions on structures. General actions
- BS EN 1993-1-1:2005+A1:2014 Eurocode 3. Design of steel structures. General rules and rules for buildings
- BS EN 1995-1-1:2004+A2:2014 Eurocode 5: Design of timber structures. General. Common rules and rules for buildings
- BS EN 10143:2006 Continuously hot-dip coated steel sheet and strip. Tolerances on dimensions and shape
- BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests
- BS EN 13986:2004+A1:2015 Wood-based panels for use in construction. Characteristics, evaluation of conformity and marking
- BS 7976-2:2002+A1:2013 Pendulum testers. Method of operation
- ISO 7892:1988 Vertical building elements. Impact resistance tests. Impact bodies and general test procedures
- BR 128 Guidelines for the construction of fire-resisting structural elements
- HSE Health and Safety Executive Guideline - Assessing the slip resistance of flooring
- NHBC Standards 2020

Remark: apart from these sources, technical information and confidential reports have been assessed; any relevant documents are in the possession of Kiwa Ltd. and kept in the Technical Assessment File of this Agrément. The Installation Manual for the System may be subject to change, the Agrément holder should be contacted for clarification of revision.

CHAPTER 5 - AMENDMENT HISTORY

Revision	Amendment Description	Amended By	Approved By	Date
-	First Issue	C Devine	C Vurley	November 2020
A	Fixing dimensions clarified	C Devine	C Vurley	February 2021

CHAPTER 6 - CONDITIONS OF USE

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