



CERTIFICATE OF APPROVAL

No CF 420

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

ETEX BUILDING PERFORMANCE LTD

Gordano House, Marsh Lane, Easton-in-Gordano, Bristol, BS20 0NE
Tel: 0800 145 6033

Have been assessed against the requirements of the Technical Schedule(s)
denoted below and are approved for use subject to the conditions
appended hereto:

CERTIFIED PRODUCT

Supalux Suspended Ceilings,
Ceiling Membranes & Timber
Floors

TECHNICAL SCHEDULE

TS49 Vertical and Horizontal
Separating Elements

Signed and sealed for and on behalf of Warringtonfire Testing and Certification Limited

Paul Duggan
Certification Manager



Issued: 21st June 2007
Reissued: 19th May 2020
Valid to: 18th May 2025





CERTIFICATE No CF 420

ETEX BUILDING PERFORMANCE LTD

Supalux Suspended Ceilings, Ceiling Membrane and Timber Floor Assemblies

1. This approval relates to the use of the above suspended ceiling, ceiling membrane and timber floor assemblies in providing fire resistance of up to 240 minutes integrity and insulation, as defined in BS 476: Parts 21, 22 or 23: 1987. Subject to the undermentioned conditions, the suspended ceiling, ceiling membrane and timber floor assemblies will meet the relevant requirements of BS 5588 for fire resisting compartment floors, for periods of up to 240 minutes (dependant upon design limitations) when used in accordance with the provisions therein.
2. This certification is provided to the client for their own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.
3. The suspended ceiling, ceiling membrane and timber floor assemblies are approved on the basis of:
 - i) Initial type testing
 - ii) Audit testing at the frequency specified in TS49
 - iii) A design appraisal against TS49
 - iv) Inspection and surveillance of factory production control
 - v) Certification to ISO 9001:2000
4. The suspended ceiling and ceiling membrane assemblies comprise Supalux board either screwed to or supported by a steel framework and, in some cases, fitted with stone wool insulation on top of the Supalux boards.
5. The protected timber floor assemblies comprise a timber floor, constructed in accordance with BS 5268: Part 2, protected on the underside with Supalux board and, in some cases, with stone wool insulation fitted on top of the Supalux board, between the timber joists.
6. This approval is applicable to Supalux suspended ceiling, ceiling membrane and timber floor assemblies as described within this Certificate.
7. The ceiling membrane and timber floor assemblies shall be mechanically fixed to wall and/or floor constructions or structural steel members having a fire resistance of at least the same period as the ceiling membrane or timber floor. The suspended ceiling assembly provides protection to the steel beams from which it is suspended.
8. The approval relates to on going production. Product and/or its immediate packaging is identified with the manufacturers' name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.

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Issued: 21st June 2007
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CERTIFICATE No CF 420 ETEX BUILDING PERFORMANCE LTD

Supalux Suspended Ceiling Assemblies

This approval relates to Supalux suspended ceiling assemblies that provide protection to steel beams supporting a concrete floor, in terms of the performance criteria of BS 476: Part 23: 1987. The approval is based on non-loadbearing tests where the limit in performance was a maximum temperature of 400°C on the steel beams. This is therefore the minimum critical steel design temperature for the steel beams.

Exposed grid system

The specification for the Supalux exposed grid ceiling system is as follows:

- | | |
|------------|--|
| Grid | <ul style="list-style-type: none">▪ Exposed T-section system that has demonstrated its ability to support ceiling panels for at least the required duration in a test to BS 476: Part 21 or 23: 1987. The main T's and cross T's have a minimum table width of 24mm.▪ Main T's are positioned at 1200/1220mm or 600/610mm centres.▪ Grid configurations are 1220mm x 610mm, 1200mm x 600mm, 610mm x 610mm and 600mm x 600mm.▪ Main T's are suspended at centres up to 1220mm.▪ Hangers are minimum 2mm-diameter galvanised steel wire fixed to the steel beams using proprietary steel flange clips. Alternatively they are fastened to the concrete soffit using proprietary all-steel ring anchors or hook anchors, minimum size 5mm (e.g. Hilti HA8 anchors or equivalent).▪ Perimeter steel angles have a minimum 32mm-wide horizontal leg, a minimum 19mm-wide vertical leg and are between 0.5mm and 0.8mm thick. They are fastened at nominal 400mm centres to the concrete or masonry surrounding structure using minimum M4 x 32mm-long steel screws into non-combustible plugs or using UPAT U-DN 6/35 anchors or equivalent. |
| Boards | <ul style="list-style-type: none">▪ Square-edged Supalux board of nominal thickness 6mm, with modular dimensions compatible with the above grid configurations.▪ Boards are fixed using steel hold-down clips – three along each 1220/1200mm edge and one at the centre of a 610/600mm edge. |
| Stone wool | <ul style="list-style-type: none">▪ Stone wool insulation with the following minimum specifications is laid over the boards and butts up to the sides of the main T's and cross T's.▪ 30 minutes protection – no stone wool required.▪ 60 minutes protection – 30mm thick x 60kg/m³ density.▪ Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions. |

These systems relate to a fire performance in terms of BS 476: Part 23: 1987 with fire exposure from below. As the ceiling is suspended, the length and width of the suspended ceiling is unrestricted.

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Concealed grid system

The specification for the Supalux concealed grid ceiling system is as follows:

- Grid
- Concealed steel channel section system that has demonstrated its ability to support ceiling boards for at least the required duration in a test to BS 476: Part 21 or 23: 1987. The primary channels are lipped channels, minimum 60mm wide x 27mm deep x 0.5mm steel thickness.
 - Primary channels are positioned at 600mm or 610mm centres. For each primary channel a provision for longitudinal expansion equivalent to 20mm for each 3m length is made by incorporating channel-section steel connectors at joints in the primary channels and suitably adjusting the distance between the ends of the adjoining lengths of primary channel at each joint.
 - Cross channels, minimum 60mm wide x 27mm deep x 0.5mm steel thickness, are positioned between the primary channels at panel joints. They are connected to the primary channels using interlocking steel connectors. A nominal expansion clearance of 3mm is left between each end of each cross channel and the adjoining primary channel.
 - Grid configurations are 1220mm x 610mm, 1200mm x 600mm, 610mm x 610mm and 600mm x 600mm.
 - The primary channels are suspended at maximum 1000mm centres using quick-fit hangers connected to rigid steel hanger rods.
 - The hanger rods are fixed to the steel beams using proprietary steel flange clips. Alternatively they are fastened to the concrete soffit using proprietary all-steel ring anchors or hook anchors, minimum size 5mm (e.g. Hilti HA8 anchors or equivalent).
 - Perimeter steel angles, 50mm x 50mm x minimum 0.7mm thick, are fastened at nominal 400mm centres to the concrete or masonry surrounding structure using minimum M4 x 32mm-long steel screws into non-combustible plugs or using UPAT U-DN 6/35 anchors or equivalent.
- Boards
- Fillets of Supalux, 75mm wide x 9mm thick, are fixed to the underside of the primary and cross channels and the perimeter angles using M4 x 25mm-long steel self-tapping screws at any convenient centres.
 - Square-edged or bevelled-edge Supalux board of nominal thickness 9mm, is screwed to the channels and perimeter angles, through the fillets, with M4 x 25mm-long steel self-tapping screws at 300mm nominal centres. All screws are positioned nominal 12mm from board edges and 40mm from board corners.
 - The board sizes are 1220mm x 1220mm, 1200mm x 1200mm, 1220mm x 610mm, 1200mm x 600mm, 610mm x 610mm or 600mm x 600mm for bevelled edge boards and up to 2440mm x 1220mm for square-edged boards.
 - All board joints coincide with the channels.

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- Stone wool
- Stone wool insulation with the following minimum specifications is laid over the boards and butts up to the sides of the primary and cross channels.
 - 60 minutes protection – no stone wool required.
 - 90 minutes protection – 40mm thick x 33kg/m³ density or 30mm thick x 45kg/m³ density.
 - 120 minutes protection – 40mm thick x 60kg/m³ density or 30mm thick x 80kg/m³ density.
 - Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions.

An alternative type of concealed steel channel section grid system may be used as an alternative to that described above provided that it has demonstrated its ability to support ceiling boards for at least the required duration in a test to BS 476: Part 21 or 23: 1987. The alternative grid system is identical to the first grid system with the following exceptions:

- The primary channels are at 1000mm maximum centres and suspended at maximum 900mm centres.
- The secondary channels run immediately under the primary channels, and perpendicular to the primary channels, at 600mm or 610mm centres. The primary and secondary channels are fastened together at each junction with a cross connector.
- The Supalux fillets and boards are screwed to the secondary channels.

These systems relate to a fire performance of up to 120 minutes in terms of BS 476: Part 23: 1987 with fire exposure from below. As the ceiling is suspended, the length and width of the suspended ceiling is unrestricted.



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Supalux Ceiling Membrane Assemblies - Suspended

Concealed grid system – integrity and insulation

The specification for the Supalux concealed grid ceiling membrane system is as follows:

- Grid
- Concealed steel channel section system that has demonstrated its ability to support ceiling boards for at least the required duration in a test to BS 476: Part 22: 1987. The primary channels are lipped channels, minimum 60mm wide x 27mm deep x 0.5mm steel thickness.
 - Primary channels are positioned at 600mm or 610mm centres. For each primary channel a provision for longitudinal expansion equivalent to 20mm for each 3m length is made by incorporating channel-section steel connectors at joints in the primary channels and suitably adjusting the distance between the ends of the adjoining lengths of primary channel at each joint.
 - Cross channels, minimum 60mm wide x 27mm deep x 0.5mm steel thickness, are positioned between the primary channels at board joints. They are connected to the primary channels using interlocking steel connectors. A nominal expansion clearance of 3mm is left between each end of each cross channel and the adjoining primary channel.
 - Grid configurations are 2440mm x 610mm, 2400mm x 600mm, 1220mm x 610mm, 1200mm x 600mm, 610mm x 610mm and 600mm x 600mm.
 - The primary channels are suspended at maximum 1000mm centres. Each suspension comprises a steel anchor connector, 1.5mm thick that fits into the primary channel, fixed to either a minimum 25mm x 25mm x 0.7mm-thick galvanised steel angle hanger or a minimum 20mm wide x 0.7mm-thick slotted steel strip hanger using two M5 x 12mm long steel bolts and nuts.
 - When suspended from steel beams, the hangers are fixed to proprietary steel flange clips using M5 x 12mm-long bolts and nuts. When suspended from a concrete soffit, the hangers are fixed to 25mm x 25mm x 1.5mm-thick soffit cleats using M6 x 30mm-long bolts and nuts.
 - For fire exposure from below the ceiling, the cleats are fixed to the concrete with minimum M6 all-steel expanding anchors (with minimum 40mm penetration into the concrete) or with M4 steel screws into non-combustible plugs (with minimum 40mm penetration into the concrete) or other steel fixing device with minimum 40mm penetration into the concrete and a minimum design extraction resistance of 0.6kN. For fire exposure from above the ceiling, the cleats are fixed to the concrete with minimum M6 all-steel expanding anchors (with minimum 65mm penetration into the concrete).
 - For fire exposure from above the ceiling, the size of the hangers is such that the tensile stress within the hangers does not exceed 15N/mm^2 for fire ratings up to 60 minutes or 10N/mm^2 for fire ratings up to 120 minutes.

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Supalux Ceiling Membrane Assemblies - Suspended

Concealed grid system – integrity and insulation

- Boards – 60 minutes
 - Perimeter steel angles, minimum 50mm x 50mm x 0.7mm thick, are fastened at nominal 400mm centres (through the 25mm leg) to the concrete or masonry surrounding structure using minimum 32mm-long x 4mm-diameter steel screws into non-combustible plugs or using UPAT U-DN 6/35 anchors or equivalent.
 - Fillets of Supalux, minimum 75mm wide x 9mm thick, are fixed to the underside of the primary and cross channels and the perimeter angles using M4 x 25mm-long steel self-tapping screws at any convenient centres.
 - Square-edged or bevelled-edge Supalux board of nominal thickness 9mm, is screwed to the channels and perimeter angles, through the fillets, with M4 x 32mm-long steel self-tapping screws at 300mm nominal centres. All screws are positioned nominal 12mm from board edges and 40mm from board corners.
 - The panel sizes are 1220mm x 1220mm, 1200mm x 1200mm, 1220mm x 610mm, 1200mm x 600mm, 610mm x 610mm or 600mm x 600mm for bevelled edge boards and up to 2440mm x 1220mm for square-edged boards.
 - All board joints coincide with the channels.
- Boards – 120 minutes
 - Two layers of square-edged Supalux boards, of nominal thickness 9mm and sizes up to 2440mm x 1220mm, are screwed to the channels and perimeter angles with M4 steel self-tapping screws, minimum 25mm-long for 1st layer and 32mm-long for 2nd layer, at 300mm nominal centres for each layer. Screws around the perimeters of boards are positioned nominal 12mm from board edges and 40mm from board corners.
 - Joints between boards in each layer coincide with the primary channels and cross channels. Board joints are staggered between layers.
- Stone wool
 - Stone wool insulation with the following minimum specifications is laid over the boards and primary and cross channels.
 - 60 minutes protection – two layers each 50mm thick x 60kg/m³ density or each 60mm thick x 45kg/m³ density.
 - 120 minutes protection – two layers each 50mm thick x 100kg/m³.
 - Joints between the slabs of stone wool that are parallel with the primary channels coincide with the primary channel positions and are staggered between the two layers by one primary channel spacing. Transverse joints between the slabs are staggered by nominal 300mm between layers.
 - Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions.

This system relates to a fire performance in terms of BS 476: Part 22: 1987 with fire exposure from above or below. As the ceiling is suspended, the length and width of the ceiling membrane is unrestricted.



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Concealed grid system – up to 240 minutes integrity only

The specification for the Supalux concealed grid ceiling membrane system is as follows:

- Grid
- Concealed steel channel section system that has demonstrated its ability to support ceiling boards for at least the required duration in a test to BS 476: Part 22: 1987. The primary channels are lipped channels, minimum 60mm wide x 27mm deep x 0.5mm steel thickness.
 - Primary channels are positioned at 600mm or 610mm centres. For each primary channel a provision for longitudinal expansion equivalent to 20mm for each 3m length is made by incorporating channel-section steel connectors at joints in the primary channels and suitably adjusting the distance between the ends of the adjoining lengths of primary channel at each joint.
 - Cross channels, minimum 60mm wide x 27mm deep x 0.5mm steel thickness, are positioned between the primary channels at board joints. They are connected to the primary channels using interlocking steel connectors. A nominal expansion clearance of 3mm is left between each end of each cross channel and the adjoining primary channel.
 - Grid configurations are 1220mm x 610mm, 1200mm x 600mm, 610mm x 610mm and 600mm x 600mm.
 - The primary channels are suspended at maximum 1220mm centres. Each suspension comprises a steel anchor connector, 1.5mm thick that fits into the primary channel, fixed to either a minimum 25mm x 25mm x 0.7mm-thick galvanised steel angle hanger or a minimum 20mm wide x 0.7mm-thick slotted steel strip hanger using two M5 x 12mm long steel bolts and nuts.
 - When suspended from steel beams, the hangers are fixed to proprietary steel flange clips using M5 x 12mm-long bolts and nuts. When suspended from a concrete soffit, the hangers are fixed to 25mm x 25mm x 1.5mm-thick soffit cleats using M6 x 30mm-long bolts and nuts.
 - The cleats are fixed to the concrete with minimum M6 all-steel expanding anchors (with minimum 40mm penetration into the concrete) or with M4 steel screws into non-combustible plugs (with minimum 40mm penetration into the concrete) or other steel fixing device with minimum 40mm penetration into the concrete and a minimum design extraction resistance of 0.6kN. For fire exposure from above the ceiling, the cleats are fixed to the concrete with minimum M6 all-steel expanding anchors (with minimum 65mm penetration into the concrete).
 - Perimeter steel angles, minimum 50mm x 50mm x 0.7mm thick, are fastened at nominal 400mm centres to the concrete or masonry surrounding structure using minimum 32mm-long x 4mm-diameter steel screws into non-combustible plugs or using UPAT U-DN 6/35 anchors or equivalent.





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Concealed grid system – up to 240 minutes integrity only

- Boards
- Fillets of Supalux, minimum 75mm wide x 9mm thick, are fixed to the underside of the primary and cross channels and the perimeter angles using M4 x 25mm-long steel self-tapping screws at any convenient centres.
 - Square-edged Supalux board of nominal thickness 9mm, is screwed to the channels and perimeter angles, through the fillets, with M4 x 32mm-long steel self-tapping screws at 300mm nominal centres. All screws are positioned nominal 12mm from board edges and 40mm from board corners.
 - The board sizes are up to 2440mm x 1220mm.
 - All board joints coincide with the channels.
- Stone wool
- None.

This system relates to a fire performance in terms of BS 476: Part 22: 1987 with fire exposure from below. As the ceiling is suspended, the length and width of the ceiling membrane is unrestricted.

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Supalux Ceiling Membrane Assemblies – Self Supporting

Integrity only – 60 and 120 minutes – fire from below

The specification for the Supalux self supporting ceiling membrane system is as follows:

- Steel frame
- Perimeter steel angle section, nominally 100mm x 50mm x 30mm, is fastened to the wall around the perimeter of the ceiling, through the 50mm leg, with minimum M6 x 50mm-long all steel fixing anchors at 300mm nominal centres. See table below for angle thickness.
 - C-channel purlins positioned at maximum 610mm centres – see table below. The C-channels are supported by the perimeter angles and span in one direction only. An expansion gap is left at both ends of the C-channels.

Ceiling span - m	C-channel purlin - mm	Perimeter angle thickness - mm	Expansion gap at each end - mm
1.2	76 x 34 x 0.55	1.0	8
1.4	92 x 34 x 0.55	1.0	8
1.6	92 x 34 x 0.75	1.0	12
1.8	100 x 44 x 1.0	2.0	12
2.0	100 x 44 x 1.0	2.0	12
2.2	100 x 44 x 1.0	2.0	15
2.4	100 x 44 x 1.2	2.0	15
2.6	100 x 44 x 1.6	2.0	15
2.8	100 x 44 x 1.9	2.0	18
3.0	150 x 44 x 1.2	2.0	18
3.2	150 x 44 x 1.2	3.0	18
3.4	150 x 44 x 1.6	3.0	23
3.6	150 x 44 x 1.6	3.0	23
3.8	150 x 44 x 1.9	3.0	23
4.0	150 x 44 x 1.9	3.0	23

- Boards
- Fillets of Supalux, minimum 75mm wide, are fixed to the underside of the C-channels and perimeter angles using M4 x 25mm-long steel self-tapping screws at 500mm nominal centres. The thickness of the Supalux fillets on the underside of the perimeter angles may be reduced by 3mm to maintain an even surface for the main ceiling boards.
 - Square-edged Supalux board is screwed to the underside of the channels and angles, through the fillets, with M4 x 38mm long steel self-tapping screws at 200mm nominal centres. All screws are positioned nominal 12mm from board edges and 40mm from board corners. Longitudinal board joints coincide with the C-channels. Lateral board joints are backed by a Supalux cover fillet, minimum 75mm wide, fastened using M4 x 25mm-long self-tapping screws at nominal 200mm centres on both sides the joint.
 - The board sizes are up to 2440mm x 1220mm.
 - The Supalux boards and fillets are nominal 9mm thick for a 60-minute fire rating and nominal 12mm thick for a 120-minute fire rating.
- Stone wool
- None.



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Integrity only - 60 and 120 minutes – fire from above or below

The specification for the Supalux self supporting ceiling membrane system is as follows:

- Steel frame**
- Perimeter steel angle section, nominally 75mm x 50mm, is fastened to the wall around the perimeter of the ceiling, through the 50mm leg, with minimum M6 x 50mm-long all steel fixing anchors at 300mm nominal centres. See table below for angle thickness.
 - C-channel purlins positioned at maximum 610mm centres – see table below. The C-channels are supported by the perimeter angles and span in one direction only. An expansion gap is left at both ends of the C-channels.

Ceiling span - m	C-channel purlin - mm	Perimeter angle thickness - mm	Expansion gap at each end - mm
1.2	76 x 34 x 0.55	1.0	8
1.4	92 x 34 x 0.55	1.0	8
1.6	92 x 34 x 0.75	1.0	12
1.8	100 x 44 x 1.0	2.0	12
2.0	100 x 44 x 1.0	2.0	12
2.2	100 x 44 x 1.0	2.0	15
2.4	100 x 44 x 1.2	2.0	15
2.6	100 x 44 x 1.6	2.0	15
2.8	100 x 44 x 1.9	2.0	18
3.0	150 x 44 x 1.2	2.0	18
3.2	150 x 44 x 1.2	3.0	18
3.4	150 x 44 x 1.6	3.0	23
3.6	150 x 44 x 1.6	3.0	23
3.8	150 x 44 x 1.9	3.0	23
4.0	150 x 44 x 1.9	3.0	23

- Boards**
- Fillets of Supalux, minimum 75mm wide, are fixed to the top and bottom of the C-channels and the underside of the perimeter angles using M4 x 25mm-long steel self-tapping screws at 500mm nominal centres. The thickness of the Supalux fillets on the underside of the perimeter angles may be reduced by 3mm to maintain an even surface for the main ceiling boards.
 - Square-edged Supalux board is screwed to the top and bottom of the channels, through the fillets, with M4 x 38mm long steel self-tapping screws at 200mm nominal centres. All screws are positioned nominal 12mm from board edges and 40mm from board corners. Longitudinal board joints coincide with the C-channels. Lateral board joints are backed by a Supalux cover fillet, minimum 75mm wide, fastened using M4 x 25mm-long self-tapping screws at nominal 200mm centres on both sides the joint.
 - The board sizes are up to 2440mm x 1220mm.
 - The Supalux boards and fillets are nominal 9mm thick for a 60-minute fire rating and nominal 12mm thick for a 120-minute fire rating.
- Stone wool**
- None.



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Integrity and insulation – fire from above or below

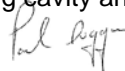
The specification for the Supalux self supporting ceiling membrane system is as follows:

- Steel frame
- Perimeter steel angle section, nominally 75mm x 50mm, is fastened to the wall around the perimeter of the ceiling, through the 50mm leg, with minimum M6 x 50mm-long all steel fixing anchors at 300mm nominal centres. See table below for angle thickness.
 - C-channel purlins positioned at maximum 610mm centres – see table below. The C-channels are supported by the perimeter angles and span in one direction only. An expansion gap is left at both ends of the C-channels.

Ceiling span - m	C-channel purlin - mm	Perimeter angle thickness - mm	Expansion gap at each end - mm
1.2	76 x 34 x 0.55	1.0	8
1.4	92 x 34 x 0.55	1.0	8
1.6	92 x 34 x 0.75	1.0	12
1.8	100 x 44 x 1.0	2.0	12
2.0	100 x 44 x 1.0	2.0	12
2.2	100 x 44 x 1.0	2.0	15
2.4	100 x 44 x 1.2	2.0	15
2.6	100 x 44 x 1.6	2.0	15
2.8	100 x 44 x 1.9	2.0	18
3.0	150 x 44 x 1.2	2.0	18
3.2	150 x 44 x 1.2	3.0	18
3.4	150 x 44 x 1.6	3.0	23
3.6	150 x 44 x 1.6	3.0	23
3.8	150 x 44 x 1.9	3.0	23
4.0	150 x 44 x 1.9	3.0	23

Integrity and insulation – fire from above or below

- Boards
- Fillets of Supalux, minimum 75mm wide, are fixed to the top and bottom of the C-channels and perimeter channels using M4 x 25mm-long steel self-tapping screws at 500mm nominal centres. The thickness of the Supalux fillets on the underside of the perimeter angles may be reduced by 3mm to maintain an even surface for the main ceiling boards.
 - Square-edged Supalux board is screwed to the top and bottom of the channels, through the fillets, with M4 x 38mm long steel self-tapping screws at 200mm nominal centres. All screws are positioned nominal 12mm from board edges and 40mm from board corners. Longitudinal board joints coincide with the C-channels. Lateral board joints are backed by a Supalux cover fillet, minimum 75mm wide, fastened using M4 x 25mm-long self-tapping screws at nominal 200mm centres on both sides the joint.
 - The board sizes are up to 2440mm x 1220mm.
 - The Supalux boards and fillets are nominal 9mm thick for a 60-minute fire rating and nominal 12mm thick for a 120-minute fire rating.
- Stone wool
- Stone wool insulation with the following minimum specifications is laid over the boards in the ceiling cavity and butts up to the webs of the perimeter angles and C-channels.





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- 60 minutes protection – 100mm thick x 45kg/m³ density or 50mm thick x 100kg/m³ density. The stone wool may be fitted in one or two layers.
- 120 minutes protection – 100mm thick x 80kg/m³ density or 80mm thick x 100kg/m³ density. The stone wool is fitted in two layers.
- Joints between the slabs of stone wool are staggered by nominal 300mm between layers.
- Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions.

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Timber Floor Assemblies with Supalux Ceiling – Direct Fix

The construction, maximum span and maximum loading on timber floors are in accordance with BS 5268: Part 2. These systems relate to a fire performance in terms of the loadbearing capacity, integrity and insulation performance criteria of BS 476: Part 21: 1987 with fire exposure from below. The specifications for the timber floor and Supalux ceiling assemblies are as follows:

Method 1 – 60 minutes

- | | |
|------------|---|
| Joists | ▪ Minimum size 130mm deep x 38mm wide at 610mm maximum centres; softwood grade SC3. |
| Flooring | ▪ Softwood tongued and grooved boards, minimum 19mm thick, or flooring grade wood particle board, minimum 18mm thick, with tongued and grooved joints.
▪ Square-edged softwood boards, minimum 19mm thick, overlaid with hardboard minimum 4.8mm thick. |
| Ceiling | ▪ Supalux board fillets, minimum 80mm wide x 9mm thick, are tacked to joist soffits with steel wire nails. Supalux board, 9mm thick, is fastened to the joists, through the fillets, with M4 steel woodscrews, minimum 63mm long, at 300mm nominal centres. Screws adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners. Longitudinal board joints coincide with the joists. Lateral board joints are backed by a Supalux cover strip, minimum 80mm wide x 9mm thick, fastened using M4 x 25mm-long self-tapping screws at nominal 300mm centres on both sides the joint. |
| Stone wool | ▪ Stone wool is fitted tightly between the joists immediately above the Supalux ceiling. The minimum specification for the stone wool is 60mm thick x 23kg/m ³ density or 30mm thick x 60kg/m ³ density.
▪ Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions. |

Method 2 – 60 minutes

- | | |
|----------|--|
| Joists | ▪ Minimum size 150mm deep x 50mm wide at 610mm maximum centres; softwood grade SC3. |
| Flooring | ▪ Softwood tongued and grooved boards, minimum 19mm thick, or flooring grade wood particle board, minimum 18mm thick, with tongued and grooved joints.
▪ Square-edged softwood boards, minimum 19mm thick, overlaid with hardboard minimum 4.8mm thick. |

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Timber Floor Assemblies with Supalux Ceiling – Direct Fix

- Ceiling
- Supalux board, 12mm thick, is fastened to the joists with M4 steel woodscrews, minimum 63mm long, at 300mm nominal centres or with minimum 75mm long steel nails (with heads) at 200mm nominal centres. Screws or nails adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners. Board joints coincide with the joists.
- Stone wool
- Stone wool is fitted tightly between the joists immediately above the Supalux ceiling. The minimum specification for the stone wool is 30mm thick x 60kg/m³ density.
 - Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions.

Method 3 – 60 minutes

- Joists
- The joists are of such dimensions that the residual timber at the end of a 60-minute fire exposure period will be sufficient to maintain the loadbearing capacity in accordance with BS 5268: Part 4: Section 4.1. Minimum softwood grade SC3 at 610mm maximum centres.
- Flooring
- Softwood tongued and grooved boards, minimum 19mm thick, or flooring grade wood particle board, minimum 18mm thick, with tongued and grooved joints.
 - Square-edged softwood boards, minimum 19mm thick, overlaid with hardboard minimum 4.8mm thick.
- Ceiling
- Steel angle, nominal 30mm x 30mm x 0.8mm thick, fastened to sides of joists with M4 x 32mm-long steel woodscrews at 300mm nominal centres. Supalux board, 9mm thick, is fastened to the underside of the angles with M4 x 25mm-long steel self-tapping screws at nominal 300mm centres. Screws adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners.
- Stone wool
- Stone wool is fitted tightly between the joists immediately above the Supalux ceiling. The minimum specification for the stone wool is 50mm thick x 60kg/m³ density.
 - Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions.

CERTIFICATE No CF 420

ETEX BUILDING PERFORMANCE LTD

Timber Floor Assemblies with Supalux Ceiling – Direct Fix

Method 4 – 90 and 120 minutes

- | | |
|------------|--|
| Joists | ▪ Minimum size 200mm deep x 50mm wide at 610mm maximum centres; softwood grade SC3. |
| Flooring | ▪ Softwood tongued and grooved boards, minimum 19mm thick, or flooring grade wood particle board, minimum 18mm thick, with tongued and grooved joints.
▪ Square-edged softwood boards, minimum 19mm thick, overlaid with hardboard minimum 4.8mm thick. |
| Ceiling | ▪ 90 minutes - Two layers of Supalux board, 12mm thick, are fastened to the joists. The first layer is fastened using 63mm-long wire nails at 400mm nominal centres. The second layer is fastened with M4 steel woodscrews, minimum 75mm long, at 300mm nominal centres. The board joints are staggered between layers by at least 300mm but need not coincide with the joists. The exposed layer boards joints are fastened to the upper layer of Supalux using M4 x 38mm-long self-tapping screws at nominal 300mm centres on both sides of each joint. Screws and nails adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners.
▪ 120 minutes - Two layers of Supalux board, 15mm thick, are fastened to the joists. The first layer is fastened using 63mm-long wire nails at 400mm nominal centres. The second layer is fastened with M5 steel woodscrews, minimum 100mm long, at 300mm nominal centres. The board joints are staggered between layers by at least 300mm but need not coincide with the joists. The exposed layer boards joints are fastened to the upper layer of Supalux using M4 x 38mm-long self-tapping screws at nominal 300mm centres on both sides of each joint. Screws and nails adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners. |
| Stone wool | ▪ None. |

Method 5 – 90

- | | |
|----------|--|
| Joists | ▪ Minimum size 220mm deep x 45mm wide at 610mm maximum centres; softwood grade C24. |
| Flooring | ▪ Softwood tongued and grooved boards, minimum 19mm thick, or flooring grade wood particle board, minimum 18mm thick, with tongued and grooved joints.
▪ Square-edged softwood boards, minimum 19mm thick, overlaid with hardboard minimum 4.8mm thick. |

CERTIFICATE No CF 420

ETEX BUILDING PERFORMANCE LTD

Timber Floor Assemblies with Supalux Ceiling – Direct Fix

- | | |
|------------|--|
| Ceiling | <ul style="list-style-type: none">90 minutes - Supalux board fillets, minimum 80mm wide x 15mm thick, are tacked to joist soffits with steel wire nails. Supalux board, 1mm thick, is fastened to the joists, through the fillets, with M4 steel woodscrews, minimum 75mm long, at 300mm nominal centres. Screws adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners. Longitudinal board joints coincide with the joists. Lateral board joints are backed by a Supalux cover strip, minimum 80mm wide x 12mm thick, fastened using M4 x 38mm-long self-tapping screws at nominal 300mm centres on both sides the joint. |
| Stone wool | <ul style="list-style-type: none">90 minutes - stone wool is fitted tightly between the joists immediately above the Supalux ceiling. The minimum specification for the stone wool is 60mm thick x 45kg/m³ density.Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions. |
| Loading | <ul style="list-style-type: none">The maximum bending moment on joists should be limited to equal or less than 1.8 kN.m |





CERTIFICATE No CF 420

ETEX BUILDING PERFORMANCE LTD

Timber Floor Assemblies with Supalux Ceiling and Supalux Covering the Flooring – 60 minutes exposed to fire from above

The construction, maximum span and maximum loading on timber floors are in accordance with BS 5268: Part 2. These systems relate to a fire performance in terms of the loadbearing capacity, integrity and insulation performance criteria of BS 476: Part 21: 1987 with fire exposure from above as well as below. The specifications for the timber floor and Supalux ceiling assemblies are as follows:

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|------------------------|--|
| Joists | ▪ Minimum size 130mm deep x 38mm wide at 610mm maximum centres; softwood grade SC3. |
| Flooring | ▪ Softwood tongued and grooved boards, minimum 22mm thick, or flooring grade wood particle board, minimum 22mm thick, with tongued and grooved joints.
▪ Square-edged softwood boards, minimum 22mm thick, overlaid with hardboard minimum 4.8mm thick. |
| Ceiling and stone wool | ▪ As Methods 1, 2 or 3 for the 'Timber Floor Assemblies with Supalux Ceiling (Direct Fix)'.
▪ Alternatively, minimum one layer of plasterboard, 12.5mm thick, fastened to the joists in accordance with the manufacturer's instructions for fire rated timber floors. |
| Floor covering | ▪ The flooring is covered with a single layer of Supalux board, minimum 9mm thick. The edges of the boards are fastened to the flooring with M4 x 32mm-long steel woodscrews at 400mm nominal centres. Additional flooring material may be required according to impact and load bearing requirements. |



CERTIFICATE No CF 420

ETEX BUILDING PERFORMANCE LTD

Timber Floor Assemblies – Upgrading Existing Ceiling from Below with Supalux – 60 minutes

The construction, maximum span and maximum loading on timber floors are in accordance with BS 5268: Part 2. These systems relate to a fire performance in terms of the loadbearing capacity, integrity and insulation performance criteria of BS 476: Part 21: 1987 with fire exposure from below. The specifications for the timber floor and Supalux ceiling assemblies are as follows:

- | | |
|------------------|---|
| Joists | ▪ Minimum size 150mm deep x 50mm wide at 610mm maximum centres; softwood grade SC3. |
| Flooring | ▪ Softwood tongued and grooved boards, minimum 22mm thick, or flooring grade wood particle board, minimum 22mm thick, with tongued and grooved joints.
▪ Square-edged softwood boards, minimum 22mm thick, overlaid with hardboard minimum 4.8mm thick. |
| Existing ceiling | ▪ Either gypsum plasterboard, minimum 9.5mm thick, or lath and plaster. If lath and plaster then ceiling is underlined with chicken wire mesh held in position with timber battens under the joists. The battens, nominal 50mm wide x 25mm thick, are fastened to the joists with M4 steel woodscrews, minimum 63mm long, at 400mm nominal centres. |
| Ceiling | ▪ Supalux board, 12mm thick, fitted below existing ceiling and fastened to the joists with M4 steel woodscrews at 300mm nominal centres. Screws penetrate joists by minimum 50mm. Screws adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners. Board joints coincide with the joists. |
| Stone wool | ▪ None. |



CERTIFICATE No CF 420

ETEX BUILDING PERFORMANCE LTD

Timber Floor Assemblies – Upgrading Existing Ceiling from Above with Supalux

The construction, maximum span and maximum loading on timber floors are in accordance with BS 5268: Part 2. The joists are of such dimensions that the residual timber at the end of the specified fire exposure period will be sufficient to maintain the loadbearing capacity in accordance with BS 5268: Part 4: Section 4.1. The flooring is removed and re-laid after installation of the Supalux protection system. These systems relate to a fire performance in terms of the loadbearing capacity, integrity and insulation performance criteria of BS 476: Part 21: 1987 with fire exposure from below. The specifications for the timber floor and Supalux ceiling assemblies are as follows:

System 1 – 30 minutes

- | | |
|--------------------|---|
| Joists | ▪ Minimum size 150mm deep x 63mm wide at 610mm maximum centres; softwood grade SC3. |
| Flooring | ▪ Softwood tongued and grooved boards, minimum 19mm thick, or flooring grade wood particle board, minimum 18mm thick, with tongued and grooved joints, or square-edged softwood boards, minimum 19mm thick, overlaid with hardboard, minimum 4.8mm thick. |
| Existing ceiling | ▪ Any existing ceiling. |
| Supalux protection | ▪ Supalux support strips, minimum 50mm deep x 12mm thick, are fastened to the sides of the joists with M4 x 38mm-long steel woodscrews at 300mm nominal centres. The bottom edge of each strip is in contact with the ceiling. Supalux board, minimum 6mm thick, is laid on top of the support strips between the joists. |
| Stone wool | ▪ None. |



CERTIFICATE No CF 420

ETEX BUILDING PERFORMANCE LTD

Timber Floor Assemblies – Upgrading Existing Ceiling from Above with

System 2 – 60 minutes

- | | |
|--------------------|---|
| Joists | ▪ Minimum size 200mm deep x 75mm wide at 450mm maximum centres; softwood grade SC3. |
| Flooring | ▪ Softwood tongued and grooved boards, minimum 19mm thick, or flooring grade wood particle board, minimum 18mm thick, with tongued and grooved joints, or square-edged softwood boards, minimum 19mm thick, overlaid with hardboard, minimum 4.8mm thick. |
| Existing ceiling | ▪ Any existing ceiling. |
| Supalux protection | ▪ Two Supalux support strips, each minimum 75mm deep x 12mm thick, are fastened to the sides of the joists with M4 x 62mm-long steel woodscrews at 300mm nominal centres. The screws are located nominal 12mm from upper edge of support strips. The bottom edge of each strip is in contact with the ceiling. Supalux board, minimum 12mm thick, is laid on top of the support strips between the joists. |
| Stone wool | ▪ Stone wool is fitted tightly between the joists immediately above the Supalux boards. The minimum specification for the stone wool is 80mm thick x 23kg/m ³ density. The stone wool is not required if the existing ceiling is minimum 12.5mm thick gypsum plasterboard in good condition.
▪ Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions. |

CERTIFICATE No CF 420 ETEX BUILDING PERFORMANCE LTD

Timber Roof Voids with Supalux Ceiling – Direct Fix

The construction, maximum span and maximum loading on the horizontal timber construction are in accordance with BS 5268: Part 2. The joists are of such dimensions that the residual timber at the end of the specified fire exposure period will be sufficient to maintain the loadbearing capacity in accordance with BS 5268: Part 4: Section 4.1. These systems relate to a fire performance in terms of the loadbearing capacity, integrity and insulation performance criteria of BS 476: Part 21: 1987 with fire exposure from below. The specifications for the timber construction and Supalux ceiling assemblies are as follows:

System 1 – 30 minutes

- | | |
|---------------------|---|
| Joists | ▪ Minimum size 97mm deep x 35mm wide at 610mm maximum centres; softwood grade SC3. Note – for 72mm deep joists an 80mm wide x 9mm thick Supalux board fillet is fitted to the underside of the joists. |
| Flooring
Ceiling | ▪ None.
▪ Supalux board, 9mm thick, is fastened to the joists with M4 steel woodscrews, minimum 55mm long, at 300mm nominal centres. Screws adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners. Longitudinal board joints coincide with the joists. Lateral board joints are backed by a Supalux cover strip, minimum 80mm wide x 9mm thick, fastened using M4 x 19mm-long self-tapping screws at nominal 300mm centres on both sides the joint. |
| Stone wool | ▪ Stone wool is fitted tightly between the joists immediately above the Supalux boards. The minimum specification for the stone wool is 130mm thick x 33kg/m ³ density.
▪ Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions. |

System 2 – 60 minutes

- | | |
|----------|--|
| Joists | ▪ Minimum size 145mm deep x 35mm wide at 610mm maximum centres; softwood grade SC3. Note – for 72mm, 97mm and 120mm deep joists 2 x 80mm wide x 12mm thick Supalux board fillet are fitted to the underside of the joists. |
| Flooring | ▪ None. |

CERTIFICATE No CF 420 ETEX BUILDING PERFORMANCE LTD

Timber Roof Voids with Supalux Ceiling – Direct Fix

- Ceiling
- Supalux board fillets, minimum 80mm wide x 12mm thick, are tacked to joist soffits with steel wire nails. Supalux board, 12mm thick, is fastened to the joists, through the fillets, with M4 steel woodscrews, minimum 75mm long, at 300mm nominal centres. Screws adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners. Longitudinal board joints coincide with the joists. Lateral board joints are backed by a Supalux cover strip, minimum 80mm wide x 12mm thick, fastened using M4 x 25mm-long self-tapping screws at nominal 300mm centres on both sides the joint.
- Stone wool
- Stone wool is fitted tightly between the joists immediately above the Supalux boards. The minimum specification for the stone wool is 120mm thick (2 x 60mm) x 100kg/m³ density. Joints in the stone wool are staggered by at least 150mm between layers.
 - Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions.

System 3 – 120 minutes

- Joists
- Minimum size 145mm deep x 50mm wide at 610mm maximum centres; softwood grade SC3.
- Flooring
- None.
- Ceiling
- Supalux board fillets, minimum 100mm wide x 12mm thick, are tacked to joist soffits with steel wire nails. Two layers of Supalux board, 12mm thick, are fastened to the joists, through the fillets. The first layer is fastened using 63mm-long wire nails at 400mm nominal centres. The second layer is fastened with M5 steel woodscrews, minimum 120mm long, at 300mm nominal centres. Longitudinal board joints in the first layer coincide with the joists and lateral board joints are backed by a timber cross nogging. The board joints are staggered between layers by at least 300mm but the second layer joints need not coincide with the joists or cross nogging. The exposed layer boards joints are fastened to the upper layer of Supalux using M4 x 25mm-long self-tapping screws at nominal 300mm centres on both sides of each joint. Screws and nails adjacent to board edges are positioned nominal 12mm from board edges and 40mm from board corners.
- Stone wool
- Stone wool is fitted tightly between the joists immediately above the Supalux boards. The minimum specification for the stone wool is 200mm thick (2 x 100mm) x 30kg/m³ density. Joints in the stone wool are staggered by at least 150mm between layers.
 - Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions.

CERTIFICATE No CF 420 ETEX BUILDING PERFORMANCE LTD

Timber Floor Assemblies with Supalux Suspended Ceiling – Exposed Grid

The construction, maximum span and maximum loading on timber floors are in accordance with BS 5268: Part 2. These systems relate to a fire performance in terms of the loadbearing capacity, integrity and insulation performance criteria of BS 476: Part 21: 1987 with fire exposure from below. The specifications for the floor and ceiling assemblies are as follows:

- | | |
|------------|--|
| Joists | <ul style="list-style-type: none">Minimum size 150mm deep x 38mm wide at 610mm maximum centres; softwood grade SC3. |
| Flooring | <ul style="list-style-type: none">Softwood tongued and grooved boards, minimum 19mm thick, or flooring grade wood particle board, minimum 18mm thick, with tongued and grooved joints.Square-edged softwood boards, minimum 19mm thick, overlaid with hardboard minimum 4.8mm thick. |
| Grid | <ul style="list-style-type: none">Exposed T-section system that has demonstrated its ability to support ceiling panels for at least the required duration in a test to BS 476: Part 21 or 23: 1987. The main T's and cross T's have a minimum table width of 24mm.Main T's are positioned at 600/610mm centres.Grid configurations are 1220mm x 610mm, 1200mm x 600mm, 610mm x 610mm and 600mm x 600mm.Main T's are suspended at centres up to 1220mm. The bottom of the grid is located at least 200mm below the underside of the joists.Hangers are minimum 2mm-diameter galvanised steel wire fixed to the sides of joists using minimum 38mm steel nail or M4 screw located at least 75mm above bottom of joist.Perimeter steel angles have a minimum 32mm-wide horizontal leg, a minimum 19mm-wide vertical leg and are between 0.5mm and 0.8mm thick. They are fastened at nominal 400mm centres to the concrete or masonry surrounding structure using minimum M4 x 32mm-long steel screws into non-combustible plugs or using UPAT U-DN 6/35 anchors or equivalent. |
| Panels | <ul style="list-style-type: none">Square-edged Supalux board of nominal thickness 6mm, with modular dimensions compatible with the above grid configurations.Panels are fixed using steel hold-down clips – three along each 1220/1200mm edge and one at the centre of a 610/600mm edge. |
| Stone wool | <ul style="list-style-type: none">Stone wool insulation with the following minimum specifications is laid over the panels and butts up to the sides of the main T's and cross T's.30 minutes protection – no stone wool required.60 minutes protection – 30mm thick x 60kg/m³ density.Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions. |





CERTIFICATE No CF 420

ETEX BUILDING PERFORMANCE LTD

Timber Floor Assemblies with Supalux Suspended Ceiling – Concealed Grid

The construction, maximum span and maximum loading on timber floors are in accordance with BS 5268: Part 2. These systems relate to a fire performance in terms of the loadbearing capacity, integrity and insulation performance criteria of BS 476: Part 21: 1987 with fire exposure from below. The specifications for the timber floor and Supalux ceiling assemblies are as follows:

- | | |
|----------|--|
| Joists | <ul style="list-style-type: none">▪ Minimum size 150mm deep x 38mm wide at 610mm maximum centres; softwood grade SC3. |
| Flooring | <ul style="list-style-type: none">▪ Softwood tongued and grooved boards, minimum 19mm thick, or flooring grade wood particle board, minimum 18mm thick, with tongued and grooved joints.▪ Square-edged softwood boards, minimum 19mm thick, overlaid with hardboard minimum 4.8mm thick. |
| Grid | <ul style="list-style-type: none">▪ Concealed steel channel section system that has demonstrated its ability to support ceiling boards for at least the required duration in a test to BS 476: Part 21 or 23: 1987. The primary channels are lipped channels, minimum 60mm wide x 27mm deep x 0.5mm steel thickness.▪ Primary channels are positioned at 600mm or 610mm centres. For each primary channel a provision for longitudinal expansion equivalent to 20mm for each 3m length is made by incorporating channel-section steel connectors at joints in the primary channels and suitably adjusting the distance between the ends of the adjoining lengths of primary channel at each joint.▪ Cross channels, minimum 60mm wide x 27mm deep x 0.5mm steel thickness, are positioned between the primary channels at panel joints. They are connected to the primary channels using interlocking steel connectors. A nominal expansion clearance of 3mm is left between each end of each cross channel and the adjoining primary channel.▪ Grid configurations are 1220mm x 610mm, 1200mm x 600mm, 610mm x 610mm and 600mm x 600mm.▪ The primary channels are suspended at maximum 1220mm centres using hanger brackets connected to rigid steel hangers. The bottom of the grid is located at least 200mm below the underside of the joists.▪ The hangers are fixed to the sides of joists using minimum 38mm steel nail or M4 screw located at least 75mm above bottom of joist.▪ Perimeter steel angles, 50mm x 50mm x 0.7mm thick, are fastened at nominal 400mm centres to the concrete or masonry surrounding structure using minimum M4 x 32mm-long steel screws into non-combustible plugs or using UPAT U-DN 6/35 anchors or equivalent. |

CERTIFICATE No CF 420

ETEX BUILDING PERFORMANCE LTD

Timber Floor Assemblies with Supalux Suspended Ceiling – Concealed Grid

- | | |
|------------|--|
| Panels | <ul style="list-style-type: none">▪ Fillets of Supalux, 75mm wide x 12mm thick, are fixed to the underside of the primary and cross channels and the perimeter angles using M4 steel self-tapping screws at any convenient centres.▪ Square-edged or bevelled-edge Supalux board panels of nominal thickness 12mm, are screwed to the channels and perimeter angles, through the fillets, with M4 steel self-tapping screws at 300mm nominal centres. All screws are positioned nominal 12mm from panel edges and 40mm from panel corners.▪ The panel sizes are 1220mm x 1220mm, 1200mm x 1200mm, 1220mm x 610mm, 1200mm x 600mm, 610mm x 610mm or 600mm x 600mm for bevelled edge boards and up to 2440mm x 1220mm for square-edged boards. |
| Stone wool | <ul style="list-style-type: none">▪ All board joints coincide with the channels.▪ Stone wool insulation with the following minimum specifications is laid over the panels and the primary and cross channels.▪ 60 minutes protection – 50mm thick x 45kg/m³ density.▪ Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions. |



CERTIFICATE No CF 420 ETEX BUILDING PERFORMANCE LTD

Supalux Suspended Ceiling – Junction of Compartment Wall with Roof

Where a compartment wall meets a roof, the roof may require protection over a distance of 1.5m from each face of the wall if the roof does not have the required specification.

This approval relates to a Supalux suspended ceiling assembly, in conjunction with the roof assembly, in terms of the performance criteria of BS 476: Part 22: 1987, with fire attack from below.

Integrity 60 minutes, insulation 30 minutes

The specification for the Supalux exposed grid ceiling system is as follows:

- Grid
 - Exposed T-section system, e.g. Flamebraker grid, that has demonstrated its ability to support ceiling panels for at least the required duration in a test to BS 476: Part 22 or 23: 1987. The main T's and cross T's have a minimum depth and table width of 35mm x 35mm and minimum thickness of 0.55mm.
 - Main T's are positioned at 600mm centres.
 - Grid configurations are up to 1800mm x 600mm.
 - Main T's are suspended at centres up to 1800mm.
 - Hangers are minimum 18mm wide x 0.8mm thick galvanised steel straps fixed to the grid with minimum M4 steel rivets or self-tapping screws. The hangers are either wrapped around the roof purlins or fastened to them with minimum M4 steel rivets or self-tapping screws.
 - Perimeter steel angles are minimum 25mm x 25mm x minimum 0.6mm thick. They are fastened at nominal 500mm centres to the wall structure using minimum M6 steel screws (into non-combustible plugs for masonry/concrete walls).
- Panels
 - Square-edged Supalux board of nominal thickness 6mm, with modular dimensions compatible with the grid configuration.
 - Panels are fixed using steel hold-down clips at 300mm nominal centres.
 - (See drawings below). At a minimum distance of 1.5m from the wall vertical Supalux panels are fitted up to the roof panels. The panels are fastened to additional steel angles (minimum 25mm x 25mm x 0.6mm thick) with minimum M4 steel self tapping screws and fastened either to the grid with minimum M4 steel self tapping screws or fastened into vertical grid members with hold-down clips. Where the junction between vertical and horizontal Supalux panels does not include a grid member, the junction is fitted with a steel angle, minimum 25mm x 25mm x 0.5mm thick, fastened with minimum M4 steel self tapping screws at 200mm nominal centres.

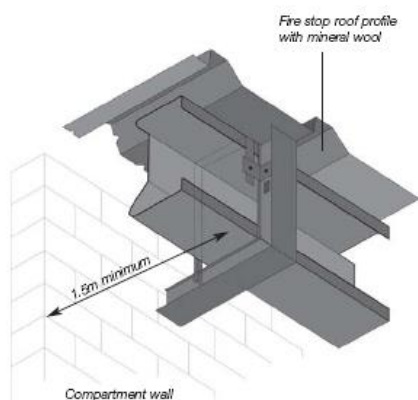


CERTIFICATE No CF 420 ETEX BUILDING PERFORMANCE LTD

Supalux Suspended Ceiling – Junction of Compartment Wall with Roof

- Stone wool
- Stone wool insulation, minimum 70mm thick x 33kg/m³ density, is laid over the panels and butts up to the sides of the main T's and cross T's. The insulation is also fitted to the inside of the vertical panels, held in place with steel wire lacing (minimum 1mm diameter) at 150mm nominal centres.
 - Alternative thicknesses and densities of stone wool insulation may be fitted provided that the weight per square metre is at least that specified and that the percentage of binder content by weight does not exceed that of the insulation fitted in the tested constructions.
- Roof
- Steel purlins supporting profiled steel roof panels.

This system relates to a fire performance in terms of BS 476: Part 22: 1987 with fire exposure from below. As the ceiling is suspended, the length of the suspended ceiling is unrestricted.



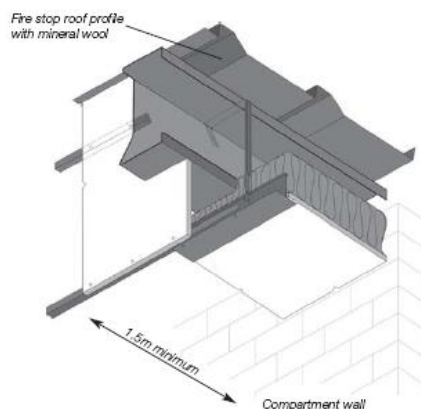
Purlins parallel to wall – (boards and mineral wool omitted for clarity).

Purlins parallel to the wall

The Flamebraker grid is cut and turned through 90° and fitted next to the purlin by means of a strap and angle bracket as shown in the drawing. Boards are fixed parallel to the purlins and held in place vertically in the grid by means of spring wedges and supported horizontally on angles (not shown in drawing) fixed to and spanning between the main tees of the grid. Boards are laid horizontally in the grid in the normal fashion beneath the purlins with the mineral wool insulation being laid on top of the boards and used to line the vertical boards.

Purlins at right angles to the wall

Boards are fixed horizontally below insulation laid on top as shown. cut to fit within the purlin and fitted underside of the roof deck and lined Any gaps in the purlin are mineral wool. Boards are fixed at fixed to the main tee of the grid and angle spanning between, and fixed



Purlins at right angle to wall

the purlin with the Vertical boards are flush with the with mineral wool. firestopped with the base to an angle also fixed to another to, the purlins.