



Intelligent Wood Systems

Compliant Category B & C Solutions

This document is compliant with the UKTFA Separation Distance Document

**Design Guide to
Separating Distances
for Timber Frame
Buildings during
Construction**



Category B



Category C

Enhanced Fire Resistance During Construction



New Guidance For Timber Frame During Construction

The UK Timber Frame Association (UKTFA) has launched new guidance designed to help clients, designers and CDM Coordinators consider the risk of fire to neighbouring buildings should a fire occur in a timber frame building under construction and improve the building fabric's defence against both accidental fire and arson attack.

The guidance focuses principally on separating distances between a receiver (existing building) and emitter (new timber frame building) and has established how wide these distances need to be to mitigate the fire risk through newly defined Categories A,B and C. The guidelines also consider susceptibility to ignition of fire, a much overlooked subject.

Category A - Standard open panel timber frame

Category B - Reduced fire spread frames

Category C - Fire spread resistant frames

Categories B & C

The following general materials have been shown, through testing, to demonstrate enhanced resistance to fire during construction. To be included in Category B or C product/system manufacturers **MUST** test the chosen wall and floor configurations to the UKTFA's test programme guidelines.

Brief Description	External Walls	Load Bearing Internal Walls	Compartment Walls	Floors/Flat Roofs	Pitched Roofs
Category B - Reduced Fire Spread Frames	FR Build timber frame and FR build sheathing OR sheathing of limited combustibility or better	Sheathed walls - FR Build studs and FR Build sheathing or sheathing of limited combustibility or better OR Non-FR Build studs with sheathing of limited combustibility or better on both sides Un-sheathed walls - FR Build studs	FR Build timber frame and FR Build sheathing plus Party wall Cavity insulation or sheathing of limited combustibility or better or Non-FR Build studs with sheathing of limited combustibility on room side	FR Build joists and FR Build decking boards or boards of limited combustibility or better	Either timber trusses or rafters and purlins
	FI Build Pre-insulated wall frames with FR Build sheathing OR boards of limited combustibility or better				
Category C1 - Fire Spread Resistant Frames	Standard timber frame with non-combustible sheathing OR FR Build timber frame with sheathing of limited combustibility or better OR FR Build frames internally faced with boards of limited combustibility & FR Build sheathing externally or better		Max centres 20m		
Category C2 - Fire Spread Resistant Frames No Openings	As C1 but no openings and external sheathing to be at least sheathing of limited combustibility				

Notes:

- FR Build** is a classification of flame retardants acceptable to the UKTFA based on the Wood Protection Association (WPA) benchmark audit scheme and approvals. EN or BS reaction to fire or fire test data is not acceptable
- Non-combustible boards** will be products complying with BS 476 - part 4 or BS EN ISO 1182 euro class A1
- Boards of limited combustibility** shall be products that comply with BS 476 part 6/7 - class 0 or BS EN ISO 13823 euro class B
- Standard timber frame** - typically combustible materials, not treated with flame retardants
- FI Build** - is a classification of appropriate insulation material acceptable to the UKTFA, i.e. insulation products suitable for off-site installation

IWS Compliant Solutions

IWS have a fully compliant Category B and C solution.

Brief Description	External Walls	Loadbearing Internal Walls	Compartment Walls	Floors/Flat Roofs	Pitched Roofs
Category B - Reduced Fire Spread Frames	IWS-FR studs and IWS-FR plywood sheathing	IWS-FR studs	IWS-FR studs and IWS-FR plywood sheathing	IWS-Floor treated with IWS-FR and IWS-FR deck	Either timber trusses or flat roof types of timber based joists and timber based floor decking board
Category C1 - Fire Spread Resistant Frames	IWS-FR Build timber frame or untreated timber frame and non-com Sheathing board (IWS-FAST®Board)		IWS Single Leaf Separating Wall		
Category C2 - Fire Spread Resistant Frames No Openings	C1 with no openings		Party wall/Cavity wall insulation - Max centres 20m		

Milner Associates can consult on fire mitigation measures to optimise your project specification (0117 945 3260)

Typical Example of Category C Under Intense Fire Source Shows No Spread of Flame



Category C

IWS-FR treated studs, non-com sheathing and IWS-FR treated floors

No spread of flame and potential to self-extinguish

FR Build

To make sure that specifiers, constructors and checking authorities have confidence in selecting appropriate flame retardants for timber frame during construction the UKTFA has established an auditable and tested FR classification called FR Build.

WPA Benchmark FR Build - Guidelines

1. Quality Assurance

- 1.1 Suppliers of FR chemicals must be UKAS ISO 9001 registered for their manufacture.
- 1.2 FR Build chemicals may only be applied under factory controlled conditions by companies operating under:
 - The WPA Benchmark FR Build quality scheme or equivalent

2. User information

- 2.1 FR Build chemicals should be supplied with Material Safety Data Sheets
- 2.2 Users of FR Build treated timber should be supplied with information on safe storage and handling.

3. Marking

- 3.1 FR Build treated timber must be:
 - Traceable to treatment plant records at pack level.
 - Marked to identify them as FR Build

4. FR Build Product Characteristics

- 4.1 Build phase exposure. FR Build treated wood must comply with the UKTFA Build Phase Exposure Test, 4 week average rainfall standard.
- 4.2 Metal components of panels and other timber frame elements must be compatible with FR Build treated wood and wood-based materials.

5. Fire Performance















5.1 Test data

Treatment provider/manufacturer must be able to demonstrate all performance claims through tests carried out to the UKTFA product performance guide.



IWS-FR Build

IWS-FR (with partners Arch Timber Protection and Glenalmond Timber Company) treatment is compliant with the UKTFA's FR Build system.

Requirement	IWS Treatment	Achieved
Manufacturers UKAS ISO 9001 registered	 <p>Arch Timber Protection manufactures IWS-FR under UKAS ISO 9001</p>	
Treaters WPA Benchmark FR Build quality scheme and UKAS ISO 9001	   <p>Certificated firm No: 001/1111</p> <p>IWS' sister company Glenalmond operates under the WPA Benchmark FR Build quality scheme and UKAS ISO 9001</p>	
Product Conformity	<p>IWS-FR chemicals conform with the timber frame test criteria required by the UKTFA</p>	
User Information	 	
Marking Full colour identification	  <p>Photo courtesy of Prestoplan</p> <p>IWS-FR is a distinctive purple colour</p>	
Build phase exposure	<p>IWS-FR treated timber is produced in accordance with UKTFA requirements for FR Build materials and the application process is quality assessed under the WPA Benchmark FR Build scheme</p>	

FR FAQs

1) What is the IWS-FR composition?

The **IWS-FR** treatment is a water-based blend of complimentary flame retardant ingredients which was developed specifically to provide an envelope treatment to timbers to act as a proven flame retardant but not cause any change in the timber product or require secondary drying.

2) Why is the IWS-FR suited for timber framing elements?

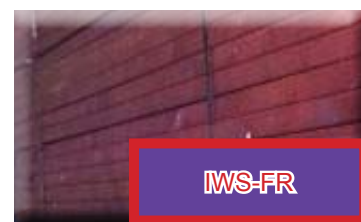
The IWS-FR is applied through a low pressure treatment and was designed for the treatment of timber frame construction timbers and formulated for the specific fire scenarios for this end use. It is a highly concentrated liquid and requires a single double vacuum treatment only to give the desired fire properties. Furthermore, it does not need to be kiln dried after treatment

3) Is the IWS-FR treated timber classed as a hazardous material?

No. IWS-FR treated timber is classified as non-hazardous. It does not contain halides (chlorides or bromides), metals, phosphates or volatile organic compounds

4) How do I recognise IWS-FR treated timber?

IWS-FR treated timber is a distinct purple colour.



5) If the colour is patchy does this mean that the IWS-FR does not cover the material in its entirety?

We have tested timber treated with the IWS treatments and proven that the protection is consistently present across all surfaces of the timber even if the colour is patchy. This is because colours bind to the timber very quickly and strongly and can be filtered out of packs especially if they are tightly packed. In order to get a more even colour strike we would have to include a number of different chemicals to improve the levelling. These chemicals reduce the binding of the colour so that it penetrates further.



Patchy IWS-FR colour, flame retardant protection is consistent

6) Is IWS-FR non-corrosive?

Yes. IWS-FR is neutral pH and non-corrosive to treatment plant components and metal fixings and fastenings.

7) Does IWS-FR provide protection on all faces?

Yes as it provides impregnation on all faces.

8) Does the IWS-FR product leach?

Yes. All FRs for timber frame elements will leach. However, the FR Build devised by the UKTFA assesses product leaching. IWS-FR treated timber has been assessed by this test and fully meets the requirements of this protocol.

Furthermore it is available in a water repellent form which will reduce leaching.

9) Does the IWS-FR last the lifetime of the building?

Yes.

IWS-FR System Supply

IWS have created a robust supply chain to ensure that the added levels of protection required to meet Categories B and C will NOT penalise clients unnecessarily either from a logistics or commercial perspective.

Category B

External, Internal and Compartment Walls

IWS-FR studs
IWS-FR plywood

Floors/Flat Roofs

IWS-Floor Joists
IWS-FR plywood deck

Category C

External Walls

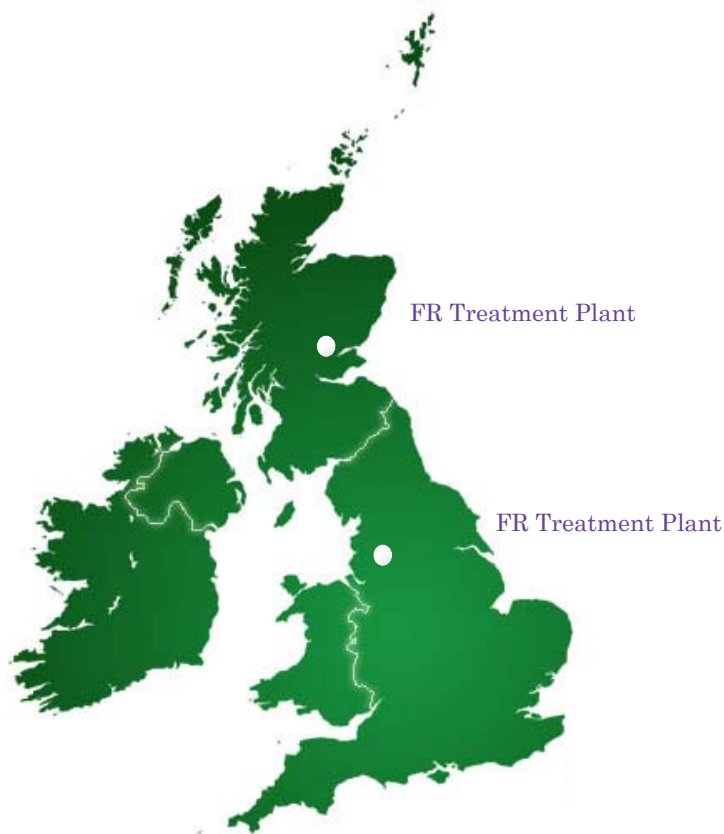
IWS-FR studs
IWS-Non-Com (IWS-FAST®Board)

Internal and Compartment Walls

IWS-FR studs
IWS-FR plywood

Floors/Flat Roofs

IWS-Floor Joists
IWS-FR plywood deck



IWS-FR

IWS Can Provide:

Fire consultancy:

- Fire consultancy
- Structural engineering



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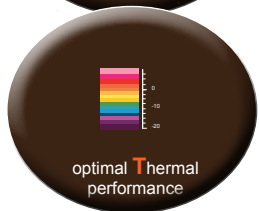
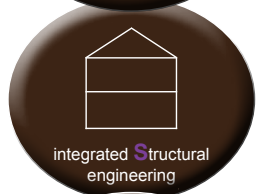
Compliant FR Products:

- FR Build sheathing
- FR Build studs
- FR Build Joist system
- Non-combustible boards
- Single leaf separating wall
- FR Build Rim



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