



**James Jones
& SONS LIMITED**
TIMBER SYSTEMS DIVISION

JJI-Joist Technical Bulletin 51

JJI-Joist fire solutions for use with the STA design guide to separating distances during construction

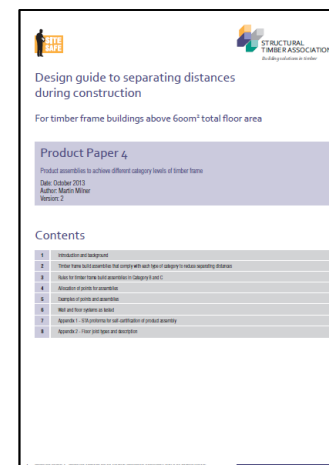
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Created by: R Brown

Introduction

This document provides a summary of the new JJI-Joists solutions for category C1 and C2 structures covered under the STA (Structural Timber Association) separating distances during construction.

The STA's design guide to separating distances during construction is a multi-part document that provides comprehensive guidance on the mitigation of the potential risk posed by a fire in a timber frame structure whilst under construction, i.e. prior to the installation of the finishings that usually provide fire resistance to the final building.

For the purpose of this summary it is assumed that a systematic risk assessment has been performed to determine the required category for each area of the timber frame. Categories vary depending on the separating distances involved. The higher the categories the more protection is required. The categories are as follows; A, B1, B2, B3 & C (C1 and C2).



Product Paper 4

Product Paper 4, available on the public part of the STA website, provides details of how each category can be achieved by combining suitable floor and wall solutions using a point based system.

The table below, extracted from page 5 of the Product Paper 4, shows the minimum points required to meet each category.

Category	Minimum total points for wall + floor assembly	Minimum points for the floor assembly alone ¹
A	<3	0
B1	3	1
B2	5	1
B2	6	1
C1/2	7	2

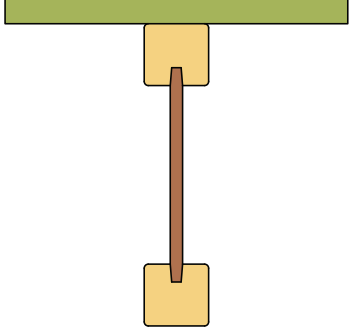
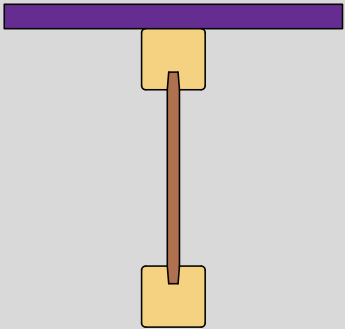
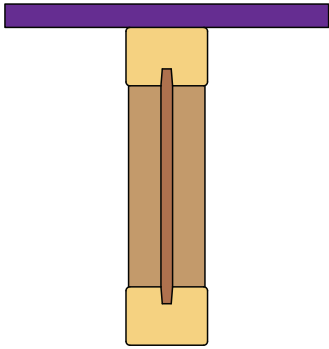
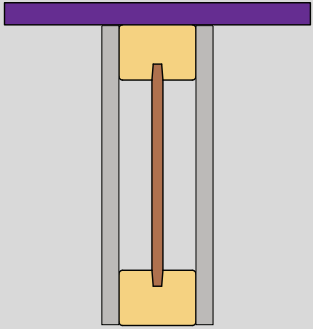
Note 1 The floor assembly has a significant bearing on the spread of the fire and minimum values are needed to ensure that a high level wall does not allow a higher level of category.

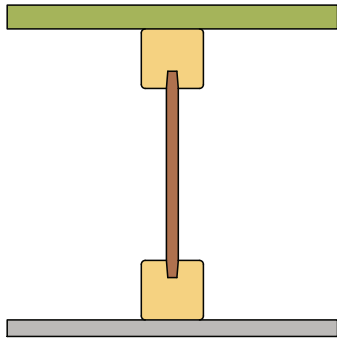
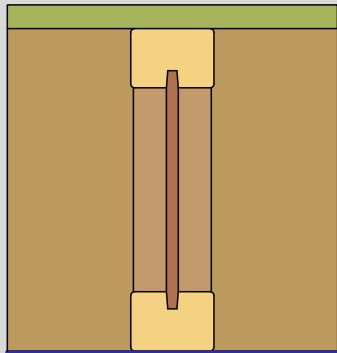
Note 2 The points do not represent anything other than a means to differentiate the different category of timber frame compliance.

JJI-Joist floors are used extensively in large timber frame units where the required category is likely to be at the higher end (C1 and C2) if the project is in an urban area. From the table it can be seen that this is only possible with a floor construction that gains two points. The good news is that a category 2 floor construction using JJI-Joists is now included in the Product Paper 4.

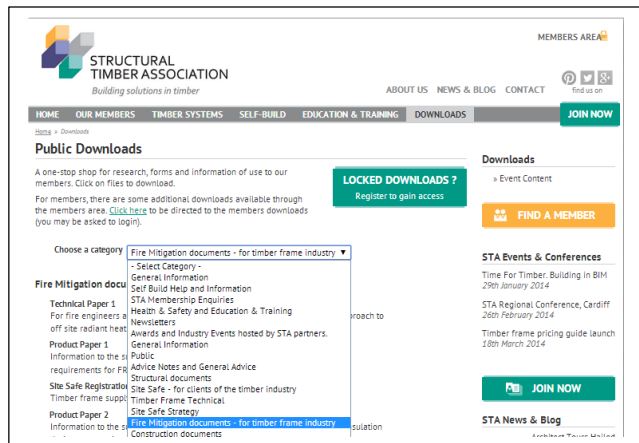
JJI-Joist Floor Solutions

Floor assemblies F1 to F4 and F7 in table 4.1.1 of Product Paper 4 detail a range of I-joist solutions for 0 points (Cat A) up to the maximum of 2 points (Cat C). Table 4.1.1 has been summarised below showing JJI-Joist solutions.

Ref	Construction of floor elements			Points
F1	Deck	Not treated		0
	JJI-Joist	Not treated		
F2	Deck	FR build treatment		1
	JJI-Joist	Not treated		
	Note:	Structural check on wall stability if floor diaphragm is absent under fire condition		
F3.2	Deck	FR build treatment		2
	JJI-Joist	Not treated JJJ-Joist with Rockwool web fill min 58mm flange (B+ Flange)		
F3.3	Deck	FR build treatment		2
	JJI-Joist	Not treated JJJ-Joist with moisture resistant A1 or A2 board		

Ref	Construction of floor elements		Points
F4	Deck	Not treated	
	JJI-Joist	Not treated	
	Ceiling	12.5mm minimum A2 board or 9mm A1 board	
F7	Deck	Not treated	
	JJI-Joist	Not treated JJI-Joist with Rockwool web fill Min 58mm flange (B+ Flange)	
	Insulation	Type 2/3 mineral wool base full depth of floor void and secured	
	Ceiling	Fire spread resistant membrane that has been tested using the STA room test protocol	

The reader should refer to the latest version of the Product Paper 4 for further information and more detailed notes. <http://www.structuraltimber.co.uk/downloads.html>



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For further information please refer to the latest edition of our Technical Manual.

For the most up-to-date information please visit our website.

