

Classifications for portable fire extinguishers



How many sticks are in your stack?

Fire classifications for portable fire extinguishers are just like your A, B, C and are widely recognised - but the fire rating number printed alongside the fire classification, for example 21A and 113B might need a quick 'read-around' to check your understanding.

Starting with Class B because I think it's a bit easier...

There are 9 ratings for Class B fire extinguishers - 21B through to 233B. The rating number refers to the size of fire that can be extinguished under test conditions.

The test method involves adding water and fuel to circular metal trays (to specified sizes) before igniting and extinguishing the fire.

A 55B test will see 1/3 water and 2/3 fuel mixed to a volume of 55 litres. This will create a 10mm layer of water and 20mm of fuel in a circular tray of 1.4m in diameter – (about the size of small garden paddling pool to give a rough idea).

Class B	
Fire size (L)	Capability Step-up
21	
34	62%
55	62%
70	27%
89	27%
113	27%
144	27%
183	27%
233	27% 62%

*233B is 27% step from 183B and 62% step from 144B

The rating numbers increase to denote the volume of liquid in the test fires.

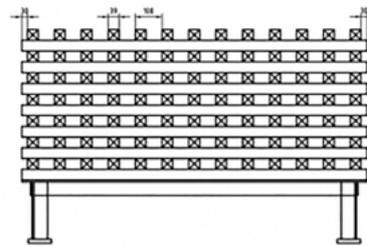
The higher the rating the increased size of fire the extinguisher can extinguish in test conditions.

It's easier to see the relationship between the increasing fire ratings if you convert them into percentages, as ratings 183B to 233B won't immediately tell you of a 27% increase in capacity, which is worth keeping in mind if you're comparing prices without drilling down to check specifications.

"Paying a bit more for an extinguisher with a superior fire rating, should feature in considerations about additional protection and better value!"

I'll use a coffee table rather than a paddling pool

I'll use a coffee table rather than a paddling pool to help contextualise ratings for Class A fire extinguishers.



A 'stack of sticks' (to specifications set out in BS EN 3-7:2004+A1:2007) are layered in increasing quantities to test Class A fire extinguishers.

A class 13A extinguisher will be able to extinguish a 0.5m x 0.56m x 1.3m wooden stack. You guessed it (or maybe you didn't) a class 21A extinguisher will need to prove itself on a stack measuring 0.5m x 0.56m x 2.1m.

By my reckoning the stack used to test 13A extinguishers is about the size of a coffee table, and the data table inserted below shows the additional capability provided by selecting a fire extinguisher with a higher rating.

Class 'A' Fire Tests								
Fire class size	stack width (m)	stack height (m)	stack length (m)	Layers in stack	No. 500mm sticks in each transverse layer	No. of 500mm sticks in stack	Stack volume m ³	Step increase in extinguisher capability
5A	0.5	0.546	0.5	14	5	35	0.1365	
8A	0.5	0.546	0.8	14	8	56	0.2184	60%
13A	0.5	0.546	1.3	14	13	91	0.3549	63%
21A	0.5	0.546	2.1	14	21	147	0.5733	62%
27A	0.5	0.546	2.7	14	27	189	0.7371	29%
34A	0.5	0.546	3.4	14	34	238	0.9282	26%
43A	0.5	0.546	4.3	14	43	301	1.1739	26%
55A	0.5	0.546	5.5	14	55	385	1.5015	28% 62%*

*A 55A rated extinguisher will extinguish a 28% larger fire than 43A and 62% more than 34A

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