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### Flame Spread Properties of Various Finishes on Asbestos Wood (Preliminary Report)

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# TECHNICAL NOTE

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APPROVED BY N. B. H.

DATE February 1964

PREPARED FOR Record purposes

SUBJECT FLAME SPREAD PROPERTIES OF VARIOUS FINISHES ON  
ASBESTOS WOOD (preliminary report)

Until recently there has been a statement in the National Building Code of Canada with regard to the flame-spread ratings of building finish materials that the effect of surface finishes  $1/28$  in. thick should be disregarded. This statement has now been deleted and as a consequence information on the performance of a number of finishes, such as paint and wallpaper, is required.

The most urgent need is for information on the effect of various finishes on "noncombustible" wall linings. In certain locations, such as escape routes, it is most desirable that flame-spread ratings should be lower than 25; a wall lining such as plaster meets this requirement quite comfortably. It is obviously essential, to conform with the intent of the Code, that any finish applied to a wall should not raise the flame-spread rating above the specified limit.

The results given here are by no means comprehensive and, in fact, this is an interim note issued with the object of making available, as soon as possible, the results which have accrued to date.

### TEST PROCEDURE

With a view to expediting the test,  $\frac{1}{2}$ -in. asbestos wood (density 0.86 gm/cc) was used as the backing material instead of plaster. The thermal conductivity of asbestos wood approximates closely to that of a conventional plaster, while the thermal capacity per unit volume is lower

(65 per cent). Regardless of the boundary conditions, therefore, heat loss to the asbestos wood will be a little lower. This would be expected to maximize flame-spread ratings.

The tests were carried out in accordance with ASTM Standard E162-62T. The test method referred to in the National Building Code is ASTM E84 but the necessary apparatus is not available at NRC. There is some correlation between the results obtained by the two test methods, however, and in many cases the results given by one test will give an indication as to the results to be expected from the other.

### FINISHES TESTED AND RESULTS

Table I lists the finishes tested and the results.

TABLE I  
FINISHES TESTED AND RESULTS

Series No.	Finish	Coating Coverage (approximate)	Results	
			I <sub>g</sub> (Flame-Spread Index)	Q (Heat Evaluation Factor)
1	Black enamel (alkyd paint)	300 sq ft/imp. gal. in 1 coat	2	1
2	White enamel (alkyd paint)	300 sq ft/imp. gal. in 2 coats	0	<1
3	Orange shellac	300 sq ft/imp. gal. in 2 coats	0	0
4	White shellac	300 sq ft/imp. gal. in 2 coats	1	1
5	White flat alkyd paint	300 sq ft/imp. gal. in 2 coats	<1	<1
6	White latex paint	300 sq ft/imp. gal. in 2 coats	<1	<1
7	White latex paint	70 sq ft/imp. gal. in 6 coats	9	2
8	Wallpaper (one layer)	Density 0.37 oz/sq ft	3	2

CONCLUSIONS

The finishes listed may be regarded as having a negligibly low flame spread when applied to plaster. It is also probable that the redecoration of plaster walls without removing the previous finish does not introduce substantial hazard, although further work is called for to determine the limits to which this statement can apply.