

The following is a summary of tests made under Rev. 1306-2.

	Vermont slate	Monson slate	Asbestos Lumber
Modulus of rupture (cut with grain)	10900	24500	6540
(cut across " - ")	6450	8470	4640
Modulus of Elasticity	16,000,000		3,000,000
Impact			
with grain	2.3		9.0
cross grain	4.1		

Resistance to loosening of screws under impact 100% 100% 100%

Deformation without breaking - A.L. about 2 1/2 to 3 times as much as slate.

The following conclusions were drawn from the test:-

Ebony asbestos excels slate chiefly in its resistance to impact and volume resistivity in humid atmospheres. For low voltage work the volume resistivity plays only a small part. Surface resistivity is affected by moisture and conductive particles is probably the same with either material, but when a flash occurs across the slate but little harm is done because the panel does not carbonize, and even with metallic or dirt particles burned into the surface the surface may be ground off and the original condition restored.

The reverse is true with ebony asbestos and bakelite. A flash across the surface may be expected to carbonize the binder in the panel and continue to carry on and until the panel is partially destroyed. This carbonization was demonstrated by the conductivity of the surface when burned in a carbon arc.

In a rough way we may say that ebony asbestos is from two to four times as good as slate under impact, but it is only from one-third to one-half the strength of Monson slate and three-fifths the strength of Vermont slate. Its modulus elasticity is only one-sixth that of slate. It is actually under impact two that the majority of broken panels fail; impact due to rough handling of packing cases, etc.

For this reason it appears a safe practice to use lighter weight panels of ebony asbestos than slate. Where impact is the controlling factor in the thickness of panel selected, the ebony asbestos 75 per cent the thickness of slate appears a logical choice.

The Shop reports that the cost of working the two materials is about the same. However, at the present time the limited use of ebony asbestos prevents us from obtaining good economy in cutting up the material, and it has become standard practice to allow 25% waste for cutting. This and the high unit price of the material keeps the cost of panels higher. The writer would recommend that no consideration be given the rate of going 100% to ebony asbestos, as it is not as universally applicable as even slate, but that we limit our use of this material to:-

- (1) - Designs where shock and vibrations may be excessive.
- (2) - For high tension work.
- (3) - When specified on order.

ASBESTOS LUMBER MUST NOT BE USED UNDER OIL. THE BINDING COMPOUND IS A TAR PRODUCT AND WILL DISSOLVE UNDER OIL.

BonesS
EXHIBIT #9
01-15-2009

EXHIBIT
BonesS
13
10/2/09

TESTS ON SLATE AND ASBESTOS LUMBER

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The CUTLER-HAMMER Mfg. Co. CHICAGO, ILL.				