EXHIBIT
Bonus 24
7-26-07

CUTLER • HAMMER
MILWAUKEE . WISCONSIN

MATERIAL-PART-PROCESS STANDARDS

The basic content of this standard was established by the Insulation Committee May 1957.
Last reviewed June 1969.

INSULATING PANEL MATERIALS

Note: Steel panels are preferred to insulating panel materials if the mounted units can be applied. All AC components (through size 3) and most DC components can be mounted on steel panels.

A. PREFERRED TYPES AND COMPARATIVE PROPERTIES

TYPE	CH SPEC NO.	RELATED CH PROCESSING FORMULA	RECOMMENDED APPLICATIONS
MONSON SLATE	CH 422–1	50–33–1A *50–33–1C	This material is preferred for all applications except insulating bases, Marine and Navy control and a few exceptions listed below.
ASBESTOS EBONY	CH 421–1	50–33–1E	Use for Marine control and insulating bases. Use for general purpose applications where more shock resistance is required than slate will provide. Do not use for rheostats, steel mill, Navy, oil immersed contactors or where arc tracking is a problem.
OHMSTONE	CH 423–1	50–33–1B	Use only when specified by customer, or when duplicating a previous application which used ohmstone. Do not use where there is a problem of heat (above 80 C), cold flow, or arc tracking. Do not use for crane, Navy, Marine or fire pump control.

** Use 50–33–1C where slate is preferred but ohmstone is acceptable.*

Comparative Properties		ASBESTOS EBONY CH 421–1	OHMSTONE CH 423–1	MONSON SLATE CH 422–1
Density:	lbs/cu inch	.074	.069	.101
Water absorption:	% increase weight	1.17	– 2.63	.106
Modulus of rupture:	psi minimum	4000	3800	8400
Impact strength: (shock resistance)				
Perpendicular to the long axis	inch lbs	32	32	20.8
Parallel to long axis	inch lbs	40	28	74.0
Temperature limitation:	F	250 F	175 F	No practical limit
Arc resistance:	Seconds	120	230	No failure

B. PREFERRED SIZES AND AVAILABLE PART NUMBERS

FOR ASBESTOS, EBONY AND OHMSTONE

Specify on drawings: PANEL thickness x width x length PER related processing formula

Example: PANEL .500 x 20 x 20 PER 50–33–1E

FOR SLATE

Specify on drawings: PANEL thickness x width x length PER related processing formula.

Example: PANEL .500 x 20 x 20 PER 50–33–1A.

Note: Processing formula 50–33 includes the coating requirements for both faces, sides and ends of the panel unless otherwise specified.

ASBESTOS EBONY 50–33–1E CH 421–1	
THICKNESS TOLERANCE:	±.016 for material under 5/8 ±.062 for material 5/8 & over
WIDTH AND LENGTH	48 x 48 Material will not be undersize.

PREFERRED THICKNESS	PART NUMBERS
.250	5009–161
.375	5009–321
.500	
.625	5009–481
.750	
° 1.000	5009–721
° 1.250	Δ 5009–841
° 1.500	5006–18

° Non-preferred for parts with a surface area of less than 144 square inches.

Δ 1.250 inch Asbestos Ebony is equal in strength to 1.500 inch Slate.

OHMSTONE 50–33–1B CH 423–1	
THICKNESS TOLERANCE:	±.062
WIDTH AND LENGTH:	48 x 48 Material will not be undersize.

PREFERRED THICKNESS	PART NUMBERS
1 1.250	⊕

⊕ 1.250 inch Ohmstone is equal in strength to 1.500 inch Slate.

SLATE 50–33–1A CH 422–1	
THICKNESS TOLERANCE:	±.062 for material under 1 inch. ±.094 for material 1 and over
WIDTH AND LENGTH:	Purchase to size: Width and length are .03 to .12 inclusive less than the specified dimension.

PREFERRED THICKNESS	Width & Length		Part Numbers
.500	8	9	1419–682
.625	8.25	11.25	1419–502
.750			
.875	6.75	12.25	1406–25
	6.75	13.5	1406–72
	6.75	27	1406–28
	10.25	12.25	1406–26
	10.25	27	1406–29
	10.25	33.75	1406–69
1.000	9	17	1406–91
	15	17	1406–92
1.250	14	36	1406–95

REVISED SEPT. 28, 1973 Supersedes Issue of Jan 29, 1971	◆ Part numbers removed.	All dimensions are in inches unless otherwise specified.		
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