PLAINTIFF'S EXHIBIT
UC-473

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CALIDRIA ASBESTOS SG-100 FOR VINYL FLOOR COVERING

"Calidria" Asbestos SG-100 pellets are highly refined, quality controlled fibers in dust-free pellet form offering improved brightness, superior reinforcing, and lower cost in vinyl asbestos floor tile. "Calidria" products are characterized by -

1. Higher fiber content
2. Low rock and gangue
3. High brightness

SG-100 is the only flooring grade of asbestos available as dense, dust-free pellets, 3/8" in diameter and 3/4" long. They provide economies in handling, shipping, warehousing and production and adapt readily to bulk handling systems. They reduce in-plant dust conditions to an absolute minimum.

SG-100 Offers Economy

Because of the extremely high-fiber content and purity of "Calidria" SG-100, it takes less to produce floor tile than when using Canadian asbestos. This superior reinforcing value of SG-100 reflects its reduced rock and gangue content as well as its higher surface area. By using SG-100, as little as one half the usual amount of asbestos may be adequate. Inexpensive limestone is used to maintain a constant high-mineral, low-binder content.

Recommendations for replacing other fiber with "Calidria" SG-100, based on the preparation of actual batches of VA tile, are as follows:

Grade	Fiber Value Units	Replacement
JM-7R06	1.00	.54# SG-~~100~~ 103-7 + .46# Limestone
JM-7TS	1.10	.59# SG-~~100~~ + .41# Limestone
Carey 7TS or 7TS-3	1.35	.73# SG-~~100~~ + .27# Limestone
JM Blue Brand (Coalinga)	1.60	.86# SG-~~100~~ + .14# Limestone
"Calidria" SG-100	1.85	

These replacement adjustments are designed to maintain the binder content of the tile constant as well as the production line processing properties. As an example, if Carey 7TS-3 represents the standard fiber, 100# of 7TS-3 should be replaced with 73# of SG-100 plus 27# of coarse limestone. Pound for pound replacement with SG-100 will result in an excessively dry stock which in turn

will adversely affect mixing and processing properties. The lower usage of brighter, cleaner "Calidria" Asbestos results in a significant pigment savings in the production of medium and brighter tile shades. This is possible by reducing the required amounts of TiO_2 and other pigments.

One of the big differences between "Calidria" and conventional asbestos is in rock content. Rock has been virtually eliminated from "Calidria." Fines present in the product are actually short fiber asbestos. This can be demonstrated by the following simple test:

Through 70 Mesh Wet Bulk Density Test Method

a. The fiberized (opened) fiber is sieved through a 70 mesh screen.

b. 5 grams of the minus 70 mesh material is placed in a 100 cc graduated cylinder and water is added to the 100 cc mark.

c. The palm of the hand is placed over the top of the graduate and it is inverted three times to mix and wet the asbestos.

d. The cylinder with its contents is then placed on a shelf and allowed to remain at rest for one hour.

e. At the end of an hour, the settled volume of the 5-gram sample is read to the nearest 1/2 cc.

Typical values are as follows:

"Calidria"	34 - 36 cc
JM Asbestos (Coalings)	30 - 32 cc
Carey 7TF	10 - 12 cc

These results reflect the fibrous nature of the fines present in "Calidria" Asbestos.

SG-100 Offers Larger Banbury Batches

Larger Banbury charges are made possible by the higher bulk density of SG-100. This permits increased production and associated manufacturing savings. Pellets are readily dispersed by high-shear equipment such as Banbury mixers; no pregrinding is necessary. (SG-100 is also available as SG-101, a reduced size, high-density product for dry blending. It has almost the same dust-free, easy handling characteristics as SG-100.)

The replacement value for "Calidria" should be determined from the Fiber Value Unit table above and batch size should be increased 5 to 7% due to the higher bulk density of the unmixed "Calidria" containing formulation. Mixing should be adjusted by means of ram pressure and ram downtime. Monitoring of the batch temperature with a hand pyrometer should be exercised in order to maintain standard batch temperatures. If temperatures exceed that usually encountered, either the ram pressure should be lowered or the ram downtime decreased. This approach is preferred to altering the cycle time since there

will be no loss in productivity due to decreased Banbury throughput. If Banbury batch temperatures are too low, the reverse adjustments of ram pressure and ram time should be made. Adoption of this technique in using "Calidria" should maintain homogeneity of the finished batch so that the end product matches the performance properties of the standard formulation.

SG-100 Offers Brighter Stock

Brighter tile shades or equivalent brightness at reduced TiO_2 levels are possible with "Calidria" SG-100 since it is a brighter and cleaner fiber. Variations between runs are essentially eliminated by the uniform quality of SG-100. A comparison is shown in Figure 1 of vinyl asbestos tile utilizing white pigment only. These stocks have been formulated for equivalent physical properties and differ only in asbestos, limestone and TiO_2 content. It is significant that the brightness of SG-100 stock is 18 - 20% brighter than JM-7R55 and 10% brighter than Carey 7TS-3 at equivalent TiO_2 loadings. Similarly equivalent brightness can be obtained at lower TiO_2 additions, resulting in additional reduction in raw material costs.

SG-100 Offers Conventional Stabilization

VA tile is stabilized by limestone, auxiliary resins (e.g., Neolyn 91), and epoxidized soya bean oil (e.g., FLEXOL EPO). The so-called stabilizers (listed below) are actually color inhibitors used to minimize interaction of asbestos with resin binder. Their use, therefore, should be formulated on the basis of parts per hundred of asbestos rather than resin. Recommended usage of stabilizers is 2.5 to 3.0 parts per hundred parts of SG-100.

Suggested Stabilizers/Manufacturers For Use With "Calidria" SG-100

Stabilizer	Manufacturer
CZ45 or CZ43	Advance Div. of Carlisle Works
Mark 140	Argus Chemical Corporation
No. 5876	Ferro Chemical Company
SL226 or SL227	Nopco Chemical Company
Nuostabe 1357 or Nuostabe 1285	Nuodex Div., Tenneco Chem.
Synpron 742	Synthetic Products, Inc.

10/30/72

TABLE I

ASBESTOS COMPARISON

	CALIDRIA	COMPETITIVE
OIL ABSORPTION (ml DOP/10 gms)	8-9	4-6
DRY BULK (lbs./cu. ft.)	44	10-16
REFLECTANCE, %	68-72	58-68
B. E. T. SURFACE AREA (m^2/gm)	56-58	10-30
MAGNETITE, %	2.0	2.5-8.0

"Calidria" Standard Grade asbestos for floor tile has been or is available in several different forms or packaging. The information about "SG-100" in this report is applicable to any of the following:

SG-100 50# paper bags, whole pellets
SG-101 50# paper bags, cracked pellets
SG-102 100# paper bags, whole pellets
SG-103 75# plastic bags, whole pellets
SG-104 Bulk Hopper Cars, whole pellets

Figure 1

COMPARATIVE BRIGHTNESS VALUES

