

**BUSINESS
CONFIDENTIAL**

**UNION CARBIDE CORPORATION
ENGINEERING AND HYDROCARBONS DIVISION
CENTRAL ENGINEERING
SOUTH CHARLESTON, WEST VIRGINIA**

*HGC will send
Shannon a copy
17 Jun 87*

ATTACHMENT D

MEMORANDUM

June 12, 1987

TO: L. E. Calvert, 803
S. W. Clark, 511
G. B. Elder, 511
R. W. Engle, 511
T. E. Hanning, 511
C. C. Neely, 511

RECEIVED

JUN 16 1987

CCN

CC: P. D. Franson, 511
J. E. Sanders, 511

FROM: H. G. Clem

SUBJECT: ASBESTOS-CONTAINING WEATHER BARRIER MASTICS FOR THERMAL INSULATION

A complete review of Material Safety Data sheets of approved products was conducted recently. Our examination revealed an potential safety and health concern with specific vapor barrier and weather barrier mastics which contained 4 to 16% asbestos up to 1984-1986. The asbestos was apparently used as a thixotropic or thickening additive in several formulations of asphaltic and latex mastic materials with the rationale that asbestos exposure would be minimized because the fibers would be encapsulated in the resinous vehicle or binder.

Mr. C. C. Neely recommended that this subject be brought to the attention of members of the UCC Task Group on the Phaseout of Asbestos-Containing Materials in the Workplace, Chemicals and Plastics Group as an agenda topic for your meeting in the next few weeks.

The mastic products which contained asbestos, listed in Table I, have all been reformulated to be asbestos-free. The only manufacturer now producing both asbestos containing and asbestos-free mastics is Plastics Coatings Corp. of St. Albans, WV; "JAXSAN 600 SF" is the asbestos-free product designation for their material which is currently being supplied to Union Carbide plants.

Since the referenced mastics have been reformulated, production of nearly all asbestos-containing mastics has been phased out. The problem in the plant environment will likely be in the repair, removal, and disposal of deteriorated mastic weather barriers which may contain asbestos. It would appear that any friable weather barrier mastics with greater than 1% asbestos by weight would fall under the EPA regulations outlined in paragraph 2.6.1 of SH-256, "Removal and Handling of Asbestos-Containing Insulation Material", but Mr. T. E. Hanning would certainly be more qualified to determine if this is the case.

Your comments on this issue will be greatly appreciated. If it is determined that a significant safety and health problem exists, please advise whether an informative memo to holders of the Insulation Technology - Thermal Insulation Manual is required or if other communication channels will be used.



H. G. Clem

HGC:es

ATTACHMENT

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TABLE I

<u>Material Spec.</u>	<u>Manufacturer</u>	<u>Trade Name</u>	<u>REMARKS</u>
1	Pittsburgh-Corning	Pittcote 300	Asbestos-free Since 1984
		Pittcote 303AL	Deleted product
	Lion Oil Company	Seal Kote (Standard)	Asbestos-free Since 1985
		Al-Kote (Heavy)	Asbestos-free Since 1985
2,3,4,5 6,7,9,10 11,12,14 4U	Childers Products Company	Vi-Cryl CP-10 and CP-11	Asbestos-free Since 1985-1986
	Plastics Coatings Corp.	Jaxsan 600SF	Asbestos-free Since 1986
		Jaxsan 600	This product contains 4.3% Asbestos

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ATTACHMENT E

**UNION CARBIDE CORPORATION
ENGINEERING AND HYDROCARBONS DIVISION
CENTRAL ENGINEERING
SOUTH CHARLESTON, WEST VIRGINIA**

MEMORANDUM

April 8, 1987

**TO: Plant Insulation Representatives
D. D. Barnette, 512
R. L. Boggess, 514
J. E. Boley, 380
D. L. Carrick, 519
A. W. Keene, 510
G. H. Reinhart, 312
R. E. Woodcock, 515**

**Maintenance Managers
B. M. Gable, 581
Robert Gauvin, 503
P. D. Gossage, 511
R. J. Hampson, 312
George LeBlanche, Moses Lake
B. A. Mallory, STAR
Doug Priegen, Mobile
Carol Prince, 513
John Turner, Prentiss**

**CC: L. E. Calvert, 803
S. W. Clark, 511
G. B. Elder, 511
R. W. Engle, 511
T. E. Hanning, 511
D. J. Hymel, 515
R. W. Maddox, 511
D. D. Miller, 512
C. C. Neely, 511
M. Patel, 511
MOC**

FROM: H. G. Clem

**SUBJECT: REQUEST FOR COMMENTS ON VISUAL IDENTIFICATION CODING OF WEATHER
BARRIERS INSTALLED OVER ASBESTOS-FREE INSULATION**

**You are invited to participate in our request for comments on
asbestos-free visual identification coding options for metallic and
mastic weather barriers for our chemical plants and related facilities.
Background information on this subject was included in my recent report.(1)**

**(1) Clem, H. G., Identification Code for Asbestos-Free
Insulation, February 13, 1987, File No.: 18495.**

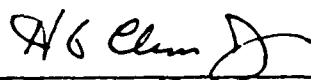
We are responding to concerns at some of our petrochemical facilities on methods of quickly identifying insulated piping and equipment that are known to be free of asbestos. Visual identification coding of weather barriers is not mandated by government regulations, but it would provide a positive means of defining areas of asbestos-free or non-hazardous insulation for personnel involved in plant operations and maintenance.

Our intent is to write a new recommended or location practice for the Thermal Insulation Manual incorporating the preference for each major location on asbestos-free insulation identification coding. Your responses to the attached questionnaire will greatly assist in this effort. If all insulation at your facility is known to be free of asbestos, please note this in the "Remarks" section of the form.

Since the removal of asbestos containing insulation is a high priority item in the corporation, this proposed asbestos-free visual coding recommended practice will help us to identify all areas where insulation is in compliance with recent government regulations. To avoid multiple responses from each plant, each designated plant insulation representative is requested to discuss this subject with department heads and plant management to obtain agreement for a given location on one or a combination of asbestos-free insulation visual coding methods.

Actual samples of asbestos-free insulation and arrow directional identification tapes, and corrugated and flat "stucco" embossed aluminum weather barrier are enclosed for reference in your discussions with plant personnel.

Our deadline for responses is May 15, 1987. If there are any questions, please call me at UNICOM 721-3689.


H. G. Clem

HGC:es

ATTACHMENT

INDEX: Attach to File No.: 18495

0074J

REQUEST FOR COMMENTS -
ASBESTOS-FREE INSULATION
VISUAL IDENTIFICATION CODING

Check the asbestos-free insulation coding preference for your UCC location from the options listed below:

1. Identification Tapes:

- a. "NA with arrows" tape _____
- b. "ASBESTOS-FREE INSULATION"
plus separate directional
arrow tape _____

2. Color Coded Weather Barrier:

- a. Blue _____
- b. White _____
- c. Green _____

3. Embossed Metal Weather Barrier:

- a. Stucco Texture - Flat _____
- b. Stucco Texture - Corrugated _____

4. Alternative Coding Preference:
(explain in remarks section) _____

REMARKS: _____

Please return this questionnaire to Harold Clem, Bldg. 740-3320,
Location 511 by May 15, 1987.

NAME: _____
UCC LOCATION: _____
DATE: _____

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**UNION CARBIDE CORPORATION
ENGINEERING AND HYDROCARBONS DIVISION
CENTRAL ENGINEERING
SOUTH CHARLESTON, WEST VIRGINIA**

MEMORANDUM

June 12, 1987

TO: L. E. Calvert, 803
S. W. Clark, 511
G. B. Elder, 511
R. W. Engle, 511
T. E. Hanning, 511
C. C. Neely, 511

CC: P. D. Franson, 511
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H. G. Clem

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0171J

UNION CARBIDE CORPORATION

ENGINEERING, MANUFACTURING AND TECHNOLOGY SERVICES DEPARTMENT
HEALTH, SAFETY AND ENVIRONMENTAL TECHNOLOGY
South Charleston, West Virginia

June 19, 1987

Copy to Harold Clem
ATTACHMENT F

TO: C. C. Neely, 511/2000-3335

COPY: L. E. Calvert, Clear Lake City
S. W. Clark, 511/2000-3316
G. B. Elder, 511/2000-1125
R. W. Engle, 511/2000-1210
P. R. Kavasmaneck, 511/2000-3235
S. S. Murphree, Texas City
J. E. Neff, 511/740-4326

FROM: T. E. Hanning

SUBJECT: General Information for Asbestos Task Group
Encapsulation of Asbestos

RECEIVED
JUN 24 1987

CCN

Clyde,

Thank you for the invitation to the next Asbestos Task Group meeting on July 23; however, I will be on an Occupational Safety and Health Survey on that date.

One of the topics of general discussion at the last Task Group meeting concerned the advantages and disadvantages of asbestos encapsulation versus total removal. I offer the following information which may be helpful in understanding asbestos abatement alternatives.

Asbestos Abatement

There are various solutions for abating health risks relating to asbestos-containing materials (ACM), including total removal, enclosure, or encapsulation of the ACM. All require detailed inspection, worker protection, work area containment, and proper post abatement clean up.

Removal is the only method in which the asbestos is physically stripped and removed once and for all from the structure and then disposed of in an environmentally acceptable fashion. The enclosure process isolates the ACM from the rest of the structural environment by solid barriers such as gypsum board. Encapsulation involves coating the ACM with a long-lived bonding agent or sealant.

Encapsulating asbestos in-situ does have advantages over removal in well defined, specific areas. Encapsulation is a cost-effective procedure that can be implemented rapidly if the ACM is firmly held in place and can give good insulating service for many years. In this case, the insulation does not have to be replaced, possible contamination due to improper removal procedures is avoided, and potential liabilities for improper transportation or disposal of asbestos are avoided.

Encapsulation procedures usually require minimal containment provided the airborne fiber level is kept low (i.e. less than 0.1 fibers per cubic centimeter, the current OSHA action limit). This alleviates the need for time-consuming set up of the air locks, containment areas, and the expensive negative air units and worker shower facilities used in removal operations. After encapsulation, a regular inspection and maintenance program must be initiated and carried out to ensure the integrity of the sealant and to monitor the airborne fiber levels. Good records must always be kept.

Encapsulation Caveats

Encapsulation should not be contemplated if the ACM is in very poor condition (large chunks falling or hanging from ceiling or walls), which would indicate that the cohesive/adhesive strength of the ACM to the substrate material was inadequate due to improper installation, general aging effects, mechanical damage, or damage due to water leaks.

If encapsulation were attempted in these cases, the deterioration of the ACM would be accelerated due to the added weight of the encapsulant pulling down large areas of ceiling/wall ACM. This would inevitably lead to higher airborne fiber levels and increased asbestos contamination.

In the case of an ACM applied to a ceiling, encapsulation should not be attempted if there is evidence of past water damage to that ceiling. This may be taken as being indicative of a future water leak problem, especially if the cause has gone uncorrected. If a leak were to develop above an encapsulated ceiling the water would collect and cause localized "ballooning" which would eventually result in the collapse of a part of that ceiling.

Encapsulant Types

A special form of encapsulant has been developed for use on pipework and boiler laggings - abatement candidates that respond well to encapsulation techniques. These types of encapsulants are usually of high viscosity and have been designed to withstand the high temperatures experienced on the surfaces of steam pipes and boilers without degrading and/or cracking. Penetrating encapsulants should contain surfactants that allow the encapsulants to flow into the bulk of the ACM and then solidify. Bridging encapsulants form an integral film on the surface. They can be tinted to virtually any desired color using commercially available paint toners.

Bridging and penetrating encapsulants are different products and should have different properties. Bridging encapsulants that can be diluted with water to make them into penetrating encapsulants are at best compromises. For maximum encapsulating effect, both types should be used in a two-coat application.

Standard methods for the evaluation of encapsulating sealants have been developed by research workers at Battelle Laboratories in Columbus, Ohio. These methods include tests for measuring the cohesive/adhesive strengths, penetration, impact strength, smoke generation, toxic gas release, fire resistance, and the ability to wet asbestos fibers.

Specifiers and contractors contemplating the encapsulation of ACM should pay particular attention to the above described parameters when comparing encapsulants offered by competing manufacturers. Coverage figures quoted can, and often are, misleading. At best they are for ideal situations. The only way of determining coverage is to try and encapsulant on an actual and representative area of ACM. Most manufacturers of encapsulants are happy to provide sample quantities of their products and application advice.

In conclusion, encapsulation is not intended to be a cure-all asbestos abatement procedure. It is another useful technique to be used as and when needed by the asbestos abatement contractor.

Sincerely,



Terry E. Hanning
8-721-5903

Reference: Charles Rye, Industrial Safety and Hygiene News, Certified Technologies Corporation.