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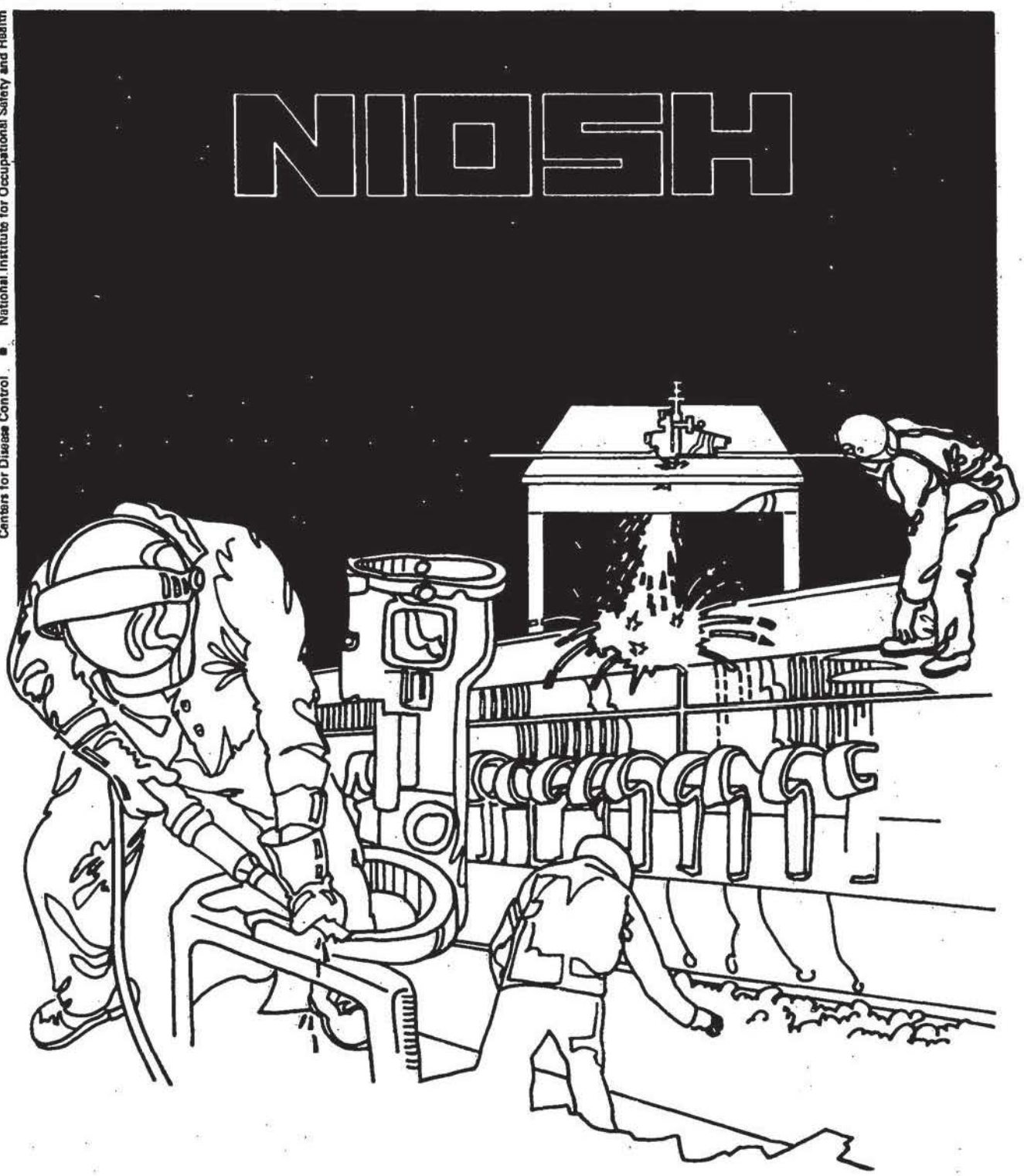

Health Hazard Evaluation Report

HETA 82-179-1154
WILMINGTON HIGH SCHOOL
WILMINGTON, OHIO

PREFACE

The Hazard Evaluations and Technical Assistance Branch of NIOSH conducts field investigations of possible health hazards in the workplace. These investigations are conducted under the authority of Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 669(a)(6) which authorizes the Secretary of Health and Human Services, following a written request from any employer or authorized representative of employees, to determine whether any substance normally found in the place of employment has potentially toxic effects in such concentrations as used or found.

The Hazard Evaluations and Technical Assistance Branch also provides, upon request, medical, nursing, and industrial hygiene technical and consultative assistance (TA) to Federal, state, and local agencies; labor; industry and other groups or individuals to control occupational health hazards and to prevent related trauma and disease.

HETA 82-179-1154
AUGUST 1982
WILMINGTON HIGH SCHOOL
WILMINGTON, OHIO

NIOSH INVESTIGATOR:
Laurence D. Reed, IH

I. SUMMARY

In March, 1982, the National Institute for Occupational Safety and Health (NIOSH) received a request from the Business Manager of Wilmington High School, Wilmington, Ohio, to evaluate the classrooms for possible exposure to asbestos fibers from ceiling materials. Concern was expressed about the possibility of ceiling materials containing asbestos fibers and that these fibers might be an airborne hazard.

On April 9, 1982 NIOSH conducted an evaluation of the classrooms at Wilmington High School. The main portion of the high school was built in 1952 and an addition was completed in 1964. Approximately 2200 students, teachers, and employees use the school facilities each year.

Bulk samples of the ceiling material were collected from nine classrooms to be analyzed by polarized light microscopy for the presence of asbestos fibers. Area total particulate air samples were collected in these classrooms using open-face (AA) filters at a flow rate of 2.0 liters per minute for approximately five hours. These samples were analyzed by phase contrast microscopy to determine airborne asbestos concentrations.

Analyses of the bulk samples indicated that eight of the nine classroom ceilings contained 20-30% chrysotile, a type of asbestos. The final classroom (music room) ceiling did not contain asbestos. The area total particulate air samples all yielded non-detectable results for asbestos fibers.

Students, teachers, and staff reported no work related health complaints.

Results of this study indicate that students, teachers, and staff of Wilmington High School are not currently exposed to detectable levels of airborne asbestos fibers. However, with the exception of the music room, the analyses of bulk ceiling samples from all classrooms indicate a 20-30% asbestos (chrysotile) content. Moreover, as long as the ceiling maintenance-integrity is not compromised (i.e., no cracking, blistering, or sloughing) no health hazard from exposure to airborne asbestos fibers would be expected. If the ceiling integrity becomes compromised, recommendations for encapsulation are made in Section II of this report.

KEYWORDS: SIC 8211 (Elementary and Secondary Schools), asbestos

II. RECOMMENDATIONS

1. If the integrity of the ceilings were compromised (i.e., cracking, blistering, sloughing), a suitable material should be applied to seal the asbestos fibers. There are a number of references available dealing with encapsulation of asbestos containing materials, including an Environmental Protection Agency (EPA) document, "Sprayed Asbestos-Containing Materials in Buildings," (EPA - 450/2-78-014, Office of Air and Waste Management, Research Triangle Park, North Carolina, 1978.)

2. If a new ceiling is installed or destructive work performed on the ceiling, all workers should wear appropriate personal protective equipment, including NIOSH approved half-face respirators with high-efficiency particulate filters, and disposable gloves and outer garments. To prevent cross-contamination, "clean" and "dirty" change-of-clothes areas should be established in the work area. During the ceiling work, school staffing should be minimized and all doors should be closed to reduce the potential for asbestos fiber exposure. To reduce dust dispersion, all material on the floor should be wetted before removal.

3. Reference is made to CFR 29, 1910.1001 which describes Occupational Safety and Health Administration (OSHA) asbestos regulations. Reference is also made to the document jointly prepared by OSHA and EPA which thoroughly outlines asbestos removal from schools ("Asbestos-Containing Materials in School Buildings." Parts I and II. EPA, Office of Toxic Substances, Washington, D.C., 1979.) Included in this document are the Federal requirements for contractors performing this type of work. Before a contract is awarded for asbestos removal, school officials should review the containment and safety procedures for each proposal. They should also determine if the procedures are being followed after the work commences.

III. AUTHORSHIP AND ACKNOWLEDGEMENTS

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IV. DISTRIBUTION AND AVAILABILITY OF REPORT

Copies of this report are currently available upon request from NIOSH, Division of Standards Development and Technology Transfer, 4676 Columbia Parkway, Cincinnati, Ohio 45226. After 90 days, the report will be available through the National Technical Information Service (NTIS), 5285 Port Royal, Springfield, Virginia 22161. Information regarding its availability through NTIS can be obtained from NIOSH Publications Office at the Cincinnati address. Copies of this report have been sent to:

1. Business Manager, Wilmington High School, Wilmington, Ohio
2. Principal, Wilmington High School, Wilmington, Ohio
3. NIOSH, Region V
4. OSHA, Region V

TABLE I

BULK AND AREA ASBESTOS FIBER SAMPLES

WILMINGTON HIGH SCHOOL
WILMINGTON, OHIO

HE 82-170

Room Number	Bulk Sample Analysis (% asbestos and type)	Airborne Asbestos Conc. (fibers/cc)	Sampling Period
124 (hallway)	20-30% chrysotile	<.01*	10:00-15:06
216	20-30% chrysotile	<.01	10:22-15:35
108	20-30% chrysotile	<.01	10:03-15:02
129	20-30% chrysotile	<.01	10:04-14:59
Music Room	No Asbestos Detected	<.01	10:26-15:46
Cafeteria	(No Sample Collected)	<.01	10:09-15:15
Admin. Room	(No Sample Collected)	<.01	10:14-(>16:00)
222	20-30% chrysotile	<.01	10:16-15:26
226 (hallway)	20-30% chrysotile	<.01	10:32-15:23
212	20-30% chrysotile	<.01	10:19-15:31

* All total asbestos fiber sample results were non-detectable. These results are listed as less than ("<") the analytical limit of detection (4500 fibers/filters).

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