

received from the primary manufacturer is prepared prior to attachment to the metal brake shoe. This preparation might involve drilling holes or grinding to fit a shoe. The pad is then riveted to the metal shoe. Despite the use of local exhaust, grinding generates high volumes of asbestos dust. Thus, grinding results in problem exposures as it does in primary manufacturing.

OSHA's determination of feasibility in this sector is also based on data obtained in response to the RTI survey. These data, which were obtained from four plants, are summarized in Table 19. As the average exposures shown were well below 0.2 f/cc, OSHA has determined that it is feasible for this sector to comply with the 0.2 f/cc PEL, except for grinding operations, where respirators will be used.

TABLE 19.—WORKER EXPOSURES DURING THE SECONDARY FABRICATION FRICTION PRODUCTS

Job classification/process	Mean 8-hr TWA exposure (f/cc)	Standard deviation	Number of observations
Dry mechanical ¹	0.07	0.04	² 60
Other ²	0.04	0.03	³ 152

¹ Data obtained from plants designated as "gg," "hh," "mm," and "nn."

² Four plants reported average values. The number presents the employment at the plants in this job category.

³ Data obtained from plants designated as "hh," "nn," and "gg" in the RTI survey.

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis, as derived from RTI survey.

OSHA's feasibility analysis for this sector is based on 70 observations obtained from the OSHA MIS compliance data for the years 1979 through 1984. These observations ranged from non-detectable to 0.43 f/cc, with a mean value of 0.08 f/cc and a standard deviation of 0.1 f/cc. Based on these data which do not represent the best controlled plants, OSHA has determined that it is feasible for this sector to comply with the 0.2 f/cc PEL.

Textiles

Secondary manufacturers produce fire-resistant and heat-resistant materials and electrical insulation from asbestos cloth and yarns. Data from OSHA MIS data and RTI surveys [See Appendix C of the RIA] indicate that the cutting of asbestos fibers and the sewing of these materials with asbestos thread result in exposures above 0.2 f/cc PEL. OSHA's feasibility determination that this sector may have difficulty meeting the PEL is based on data obtained from two plants in response to the RTI survey and from an OSHA inspection report. These data are summarized in Table 20.

As it may not be feasible for these operations to be performed with

Gaskets and Packing

The report prepared by Versar [Exhibit 333] indicated that 95 percent of asbestos gaskets and packings undergo secondary manufacturing. Secondary fabrications cut the gaskets from paper sheets using metal die stamping or pressing machinery. Sawing and drilling are sometimes performed in the finishing of the gaskets.

The greatest potential for exposure in the secondary fabrication of packings occurs during slitting and braiding operations. Wet methods are sometimes used in the braiding of asbestos yarns. Local exhaust systems are used along with housekeeping practices to minimize exposures.

exposures below 0.2 f/cc, respirators may have to achieve the PEL. This determination is consistent with the data provided by Raymark [Appendix B of the RIA] and with the position of the AFL-CIO [Exhibit 335, p. 44] that this is a problem sector. OSHA, however, expects that plants in this sector would utilize controls used by other asbestos processors (e.g., local exhaust ventilation, vacuums, etc.). These controls are currently available and their implementation should reduce exposures.

TABLE 20.—WORKER EXPOSURES DURING THE SECONDARY MANUFACTURE OF ASBESTOS TEXTILES

Job classification/process	Mean 8-hr TWA exposure (f/cc)	No. of observations	Source of data
Sewing and cutting of fabric	0.6	3	OSHA MIS.
Sewing and cutting of fabric	1.5-1.8	18	RTI Survey. ¹
Other	0.185	2	OSHA MIS.
Other	1	12	RTI Survey. ²

¹ Number of samples was not reported. These data represent the number of workers represented by the readings.

² Plant designated as "ss" (see Appendix C of the RIA).

³ Plant designated as "n" (see Appendix C of the RIA).

Source: U.S. Department of Labor, OSHA Office of Regulatory Analysis.

Plastics

The secondary manufacture of asbestos-reinforced plastics involves the forming and finishing of preform plastics received from primary manufacturers. The process steps are the same as these for primary manufacturing. The preform is received and then remelted. It is then rolled, stamped, pressed, or molded as in primary manufacturing. The product is cured in an enclosed area which is furnished with local ventilation. When curing is complete, the product is finished through operations that may include grinding, drilling, or sanding. Hand and portable tools are equipped with shrouded exhaust/collection systems. Larger finishing machines use local exhaust systems near the surface being finished.

The dry mechanical operations performed in this industry are similar to the finishing steps of primary manufacturing where exposures have been shown to exceed the 0.2 f/cc PEL. There were no comments submitted to the OSHA record, however, that indicated that a 0.2 f/cc TWA would not be feasible for this sector. Consequently, although the Agency recognizes that some dry finishing operations may cause high exposures for short periods of time, OSHA believes it is technologically feasible to reach a 0.2 f/cc TWA. This determination is based on seven OSHA compliance reports which indicated an average exposure of 0.1 f/cc.

Automotive Brake and Clutch Remanufacturing

This type of remanufacturing is a salvage operation that rebuilds worn brakes and clutches. Worn brake pads and clutch facings are stripped from their metal supports and are replaced with new pads and linings. The stripping of the old asbestos pad is a potential source of high exposures. To remove the entire used pad, the operation may require abrasive action which causes dust to be generated. Once the metal back of the old pad has been cleaned, the process is identical to the assembly procedure described earlier for the fabrication of secondary friction products. OSHA based its feasibility determinations on data obtained from the OSHA MIS data base and from responses to the RTI survey. These data are summarized in Table 21. As the mean exposures for this industry are 0.12 f/cc or below, OSHA has determined that it is feasible for this sector to comply with the 0.2 f/cc PEL.